

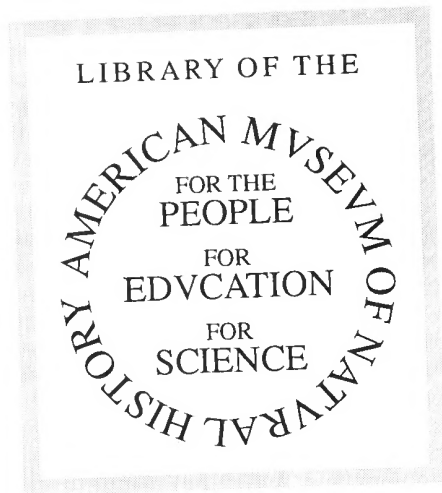
Whale notes & measurements  
Japan 1910

R. C. Andrews



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Kōzo - tree from which  
paper is made -  
made in Tosa province



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Roy C. Andrews

K. 219

Only 30 whaling ships allowed in Japan.

Blue 62  
57

many  
2 last vest  
1 chin

Frank  
43 vest  
28 ribs 0/5

many  
~~many~~  
5 or 4 m. m. m.

See P.K.  
vest 51

7  
14  
13  
23  
57

Spenn  
45 vest  
15 chin  
20 ribs  
2 hands

many 3 vest





| Page           |                            | Order      |  |
|----------------|----------------------------|------------|--|
| 2 <sup>5</sup> | Sei whale no               |            |  |
| 5              | Blue whale no 1            | Oshima     |  |
| 10             | Sei " "                    | " 2 "      |  |
| 15             | Killer " "                 | " 3 "      |  |
| 23             | Sei " "                    | " 4 "      |  |
| 28             | " " "                      | " 5 "      |  |
| 32             | Finback                    | " 6 "      |  |
| 35             | Blue " "                   | " 7 "      |  |
| 39             | " " "                      | " 8 "      |  |
| 42             | Finback                    | " 9 Aikawa |  |
| 45             | " " "                      | " 10 "     |  |
| 47             | " " "                      | " 11 "     |  |
| 51             | " " "                      | " 12 "     |  |
| 54             | " " "                      | " 13 "     |  |
| 56             | Blue whale                 | " 14 "     |  |
| 59             | " " foetus                 | " 14 a "   |  |
| 61             | Finback                    | " 15 "     |  |
| 66             | " " "                      | " 17 "     |  |
| 68             | Sei whale                  | " 19 "     |  |
| 79             | Finback                    | " 20 "     |  |
| 83             | Humpback                   | " 21 "     |  |
| 86             | Finback                    | " 22 "     |  |
| 89             | " " "                      | " 23 "     |  |
| 92             | Sei whale                  | " 24 "     |  |
| 96             | Humpback                   | " 25 "     |  |
| 99             | Sei whale                  | " 26 "     |  |
| 102            | <u>Pinnipedia borealis</u> | " 27 "     |  |
| 104-56         | " " "                      | " 28 "     |  |
| 107            | " " "                      | " 29 "     |  |
| 114            | <u>P. obliquus</u>         | " 30 "     |  |

| Page |                           |  |
|------|---------------------------|--|
| 116  | <u>P. obliquus</u> no, 31 |  |
| 117  | Phocena " 32              |  |
| 125  | <u>P. obliquus</u> " 38   |  |
| 132  | <u>G. scammoni</u> " 40   |  |
| 140  | Small fish " 49           |  |
| 142  | <u>P. obliquus</u> " 50   |  |
| 147  | Sperm " 46                |  |
| 147  | " " 47                    |  |
| 150  | " " 48                    |  |
| 153  | " " 52                    |  |
| 157  | Finback nos 53 & 54       |  |
| 160  | Blue whale " 55           |  |
| 162  | Sperm " 56                |  |
| 163  | " " 57                    |  |
| 167  | " " 58                    |  |
| 170  | " " 59                    |  |
| 171  | " " 60                    |  |
| 173  | " foetus " 60a            |  |
| 178  | Sei whale " 61            |  |
| 179  | " " " 62                  |  |
| 182  | " " " 63                  |  |
| 184  | Finback " 64              |  |
| 185  | Sei whales nos. 55-66     |  |
| 186  | " " 67-68                 |  |
| 187  | " " 69                    |  |
| 187  | " foetus                  |  |
| 188  | Sei whale " 70            |  |
| 189  | " " " 72                  |  |
| 190  | Humpback skeleton " 25    |  |
| 193  | Sperm " 71                |  |
| 194  | Sei whale " 72            |  |
| 194  | " " 73                    |  |

No 745

Sea whale ♀ Aug 23/10 Aikawa

Ventral line from anus & flukes gray like sides of peduncle - navel to genitalia pinkish. Posterior to fin insertion the gray on sides is very light & tinged with pinkish - only a suggestion of grayish band across abdomen - slight bluish tinge to general color. Right lip all gray to tip - ramus a little lighter - Below right fin & folds grayish all tinged with pink more or less. Folds of throat white & furrows all dark gray - folds of breast white tinged with pink and all furrows dark gray except 11 in mid-ventral line. Top of head has two ridges parallel with median ridge but more or less broken - navel at end of furrow.

Total length by caudal =  $46' - 6'' = 1417^L$

Flukes to dorsal =  $12' - 11'' = 394^L$

" " anus =  $11' - 10'' = 361^L$

" tip to tip =  $11' - 8'' = 356^L$

Mouth to blowhole =  $7' - 9'' = 236^L$

" " eye =  $9' = 274^L$

Fin tip to head hump =  $5' - 11'' = 180^L$

" " " ant. fin. =  $5' - 2'' = 157^L$

" " " post. " =  $4' - 2'' = 127^L$

" breadth =  $1' - 3'' = 38^L$

Height dorsal =  $12''$  (injured)  $\approx 31^L$

7:30 p.m.

Japan

P. H. K. K.

5

(skeleton taken)

No. 1

Blue Whale - ♀ (pregnant) Apr. 4/10 Oshima, ~~Shikoku~~, Id.

Contained a male foetus about 18 in. long.

Preserved.ColorBody

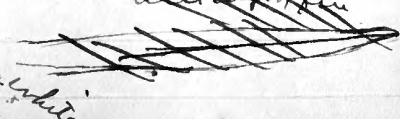
A very light whale caused by a predominance of the light gray markings. Top of head uniform slate-gray. From head backward ~~to~~ almost to dorsal, on the very median line of the back, is a narrow band of slate gray <sup>like head color</sup>. Rest of back & sides from ~~anterior of mouth~~ almost wholly light gray. The light ~~tan~~ markings are interrupted occasionally by small patches of the dark color - ~~for~~ large areas, however, are solid light gray with no suggestion of darker - Light markings turn downward & run along sides of furrows, meeting on median line below between navel and anus. On folds, at their ends, there are many gray-white dashes; these markings become pure white on the folds on the sides of the belly and extend forward nearly to insertion of fin - they do not meet on the median line on the folds of the belly. Under right pectoral is a white patch <sup>on folds of belly</sup> (broken) <sup>under left fin quite patch smaller</sup> about 2 feet wide by 2 1/2 feet deep. The white markings run upward <sup>almost</sup> to meeting this patch, and are both on the folds and in the furrows - Between pectorals

there are only a few light markings - in front of fins, on breast & throat, no light markings, uniformly slate gray like head - The light gray dashes extend forward in a narrow band to ~~eye~~ a little in front & above eye - On the peduncle the light gray color predominates and is broken by darker in only a few places -

### Pectorals

Right & Left are alike in color. Superiorly the distal  $\frac{1}{4}$  of fin is white - this extends backward along the posterior edge to the middle of fin - ~~and~~ along the anterior edge for about  $\frac{1}{3}$  of the length of the fin - rest of upper surface dark gray. The dark gray ~~of the~~ above, runs down to exact median line of the anterior edge & there meets the white of the under surface. Whole under surface of fin white. The pectorals of this whale are colored like those in one of the figures given by True of the Newfoundland Blue whales. It is rather unusual to see the white of the under surface overreaching on the tip of the fin above. I saw it in only one of the Vancouver Bl. specimens. Fin is like this:

anterior edge of fin.




Fishes

Superiorly: Above dark gray. Inferiorly Fleshes are marked with rather coarse white lines - which run from ant. edge & curve inward almost reaching posterior margin as in the Van. specimens - The ~~central area~~ <sup>distal  $\frac{1}{3}$</sup>  of flukes ~~are~~ is very light (caused by the white lining) except the tip which is <sup>dark</sup> gray. Both lobes are the same in color -

Dorsal

Gray (light) caused by many wavy light gray lines which run from anterior edge (median) diagonally downward & backward over sides - a scar near tip -  
(photographed)


Jaw  
External  
Characters

Inside right ramus of mandible, proximal  $\frac{1}{2}$  very light bluish gray, distal  $\frac{1}{2}$  bluish white - Tongue bluish slate as in Van. specimens. Mucous membrane in roof of mouth indigo as in Van. specimens.

External  
Characters

Many of the "scar" like spots on the peduncle, ~~and on~~ back, sides & proximal half of top of head. These "scars" were like those which I observed on the Vancouver Finbacks & on one or two of the Blue whales - also on one or two Alaska Humpbacks. I can see no other origin for them, ~~except~~ <sup>than</sup> that they may be due to the action of parasitic cirripeds.

Five creases run up over the posterior ~~insertion~~ <sup>insertion</sup> of fin, across its base for  $\frac{2}{3}$  of the way

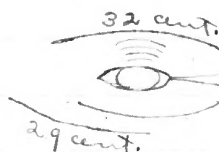


to the anterior edge.

Eye

Below eye there are two deep creases. Two creases run out from the anterior corner - above eye are 4 short, shallow creases and one long, deep one.

This sketch was made back before head had been cut at all so that it is correct.



Eye opening is 9.5 cent. long

The iris is brown

The median ridge on top of the head rises gradually from the snout, the highest point being directly in front of the anterior ends of the blowholes - here it was about six inches high. A cross section of the rostrum, taken directly in front of spiracles is like this



There are low, hardly perceptible ridges which lose themselves long before reaching snout.

The head of Van. specimens were all the same.

As far as could be seen from color & external appearance this specimen differs not at all from the Van. Blue Whales.

Measurements, see opposite page

Many of these measurements were taken when whale was in the water and while I believe most of them to be correct, yet I can not be certain of all.

9

# Measurements of No. 1

cent.

- 1 Total length snout to notch over back =
- 3 Snout to eye =
- 6 " " post. inst. of pectoral =
- 7 " " " " dorsal =
- 10 Length opening of eye = 9.5
- 16 notch of flukes to post. inst. of dorsal =
- 17 " " " " " " pectoral =
- 18 Pectoral (tip to head of humerus) } =
- 19 " " " post. insertion ) } Right =
- 20 " " " ant. " ) } =
- 21 Greatest breadth of pectoral } =
- 22 Height of dorsal (vertical) } =
- 23 Flukes, tip to tip =
- 24 " greatest breadth (ant. - post.) =
- 27 " length left lobe (axially) =

Pectoral - tip to head of humerus =  
" " " post insertion =  
" " " ant. " =

## Osteology

Vertebral formula -  $\begin{matrix} C & D & L & Ca \\ 7 & 15 & 43 & \end{matrix}$  = 65. last caudal  
Ribs - 15 pairs. about the size of a small blisking nut.  
Chirons 16 - last very small.

When the vertebral column had been assembled after the bones were cleared, it measured 53 feet 2 inches from atlas to last caudal in a straight line.

1 a.m.

T. H. K. K.

No. 2 Sei Whale ♂ (young adult) Apr. 6/10 Oshing, ~~Shikoku~~ d.

This whale was drawn out upon the cutting ship so my measurements are all accurate & were taken with the greatest care.

Color

Body

Color described as  
might be for higher?

~~The sides~~ top of the head on the right side down to about 2 inches above the eye is dark slate ~~or ventral tint~~ - the remainder of the edge of the rostrum is gray. On the left side the dark slate covers the whole of the <sup>to eye</sup> ~~about~~ about two inches above the eye it is lighter gray, for a short distance then the dark color begins again and ~~continues along back & upper sides.~~  
The edges of the snout for about 1 foot on either side are light gray. On the peduncle the dark color covers the upper  $\frac{1}{3}$  & comes down to the insertion of the flukes. The left ramus of the mandible is gray ~~or~~ ~~light~~ gray runs along the side of throat & breast, but the ramus is lighter than the latter parts. Folds of the folds below the left fin are blue ~~gray~~ slate. Throat & breast pinkish-white (deep flesh color) in furrows but folds are white -

On the sides the dark <sup>slate</sup> of the back shades off rather abruptly into light drabeller gray - As in the Finbacks this light gray comes farther & farther down on the sides until 100 cent. behind anus it covers all but a narrow

ventral line. This ventral line ~~on~~ the belly is light pink

mucous membrane in mouth is pink -

9.

Flukes below grayish white - above dark -

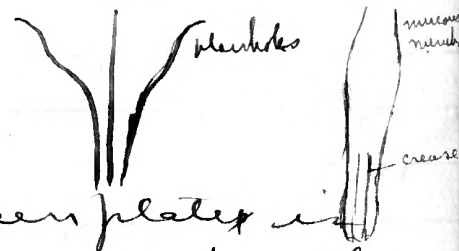
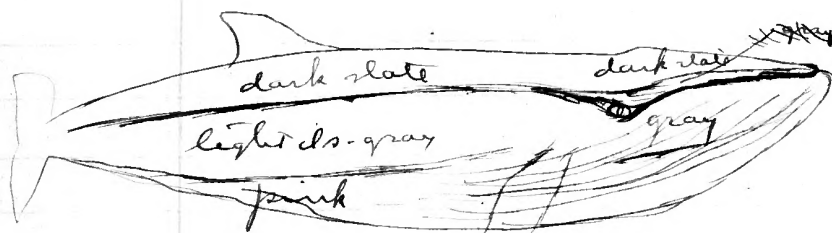
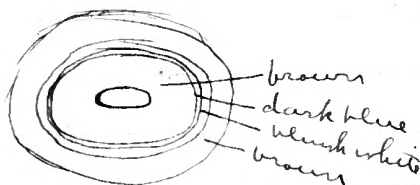
Pectorals above dark

Dorsal fin is dark slate ~~on ventral line~~ back - Very high (photographed)

Eye

Pupil widely elliptical -

iris <sup>rich</sup> brown - then comes a very narrow ring of dark blue, then a wider ring of bluish-white, then ring of brown which gradually shades off into white of eye ball



Baleen

The greater portion of baleen plates is <sup>very dark</sup> lead color, but a narrow streak of the inner edge is white - like this

The bristles are all white ex- <sup>cept at the tips</sup> ~~cept~~ at the tips which are grayish - in the

anterior  $\frac{1}{2}$  of baleen the bristles are all white, <sup>except at the tips</sup>

The bristles of posterior  $\frac{1}{2}$  become grayish at the tips, the gray being of greater extent ~~the~~ in the very back portions.

When I first looked at <sup>the</sup> baleen I thought that the bristles of all the plates were

See description of baleen of No 4 Sci whale for more full & detailed account.

N.B. Compared with Finback baleen the dark ~~the~~ colored portion of the sea whale is much darker. In fact the color of the plate is rather nearer to the Finback than the Finback.

pure white for about 10 inches up from the base. ~~On closer ex.~~ & then became tinged with grayish. On closer inspection I discovered that this grayish tinge ~~was~~ was due to the <sup>dark</sup> head colored of the baleen plates showing through the fringe of bristles, and that the bristles themselves were not grayish except on the ~~tips~~ of the posterior one half. The pure white strip along the inner base of the baleen plates give the appearance of a white <sup>about 10 inches wide</sup> band ~~along the~~ ~~base of the~~ ~~both sides of the baleen~~. Both sides of the baleen. The baleen of both sides was alike.

~~The folds end 100 cent. anterior to the umbilicus.~~ N.B. (Umbilicus not located correctly)

### Osteology

| <u>Right scapula</u>                | cent     | <u>Left scapula</u> | cent  |
|-------------------------------------|----------|---------------------|-------|
| Greatest height (vertical)          | = 40     | Ditto               | = 41  |
| " breadth                           | = 66.5   | Ditto               | = 66  |
| Length coracoid                     | = 15 6.5 | Ditto               | = 16  |
| " acromion                          | = 15 1.5 | Ditto               | = 7.5 |
| Both scapulae photographed & saved. |          |                     |       |
| <u>Left ramus of mandible</u>       |          |                     |       |
| Length straight                     | = 226    |                     |       |
| " curved                            | = 230    |                     |       |

Trip to coronoid straight = 189

Height of " vertical = 4.5.  
(coronoid cut a little)



The left pectoral fin was saved and I dissected it with great care, cutting away the cartilage from the minute phalanges at the tips of the digits. I am absolutely certain that the formula below is correct.

Left pectoral

II III IV I  
4 6 5 2

(I took as the 2nd digit the outside one on the ~~right~~ ~~side~~ ~~of the fin~~ ~~the formula will be reversed~~)

There were five carpal ossifications in this fin - 3 in the proximal row were about ~~the~~ an inch & one half in diameter & were placed in a parallel line with the ends of the radius & ulna. The two carpals in the distal row were small. The right fin presented the same number & position of the ossifications.

Left fin

Length of radius (median straight) = 46.5<sup>cent.</sup>

Breadth " " (distally " ) = 10.5

Length " ulna (median " ) = 45.3

Breadth " " (distally " ) = 9.3

Depth olecranon " " = 6

Length of humerus (median " ) = 27

There were either 12 or 13 ribs. I could not be sure which, but I think 14 pairs. (N.B. In no 4 Sci whale I find 13 prs of ribs & this is probably the normal number.)

(Measurements see page 14)

## Measurements of Sei whale no. 2

cont. 11

|    |   |                  |
|----|---|------------------|
| 1  | Total length snout to notch                         | = 1007           |
| 3  | Snout to eye  | = 195            |
| 4  | " " ear   | = 253            |
| 5  | " " blowhole (center)                               | = 1551           |
| 6  | " " post. insert. pectoral                          | = 350            |
| 7  | " " " " dorsal                                      | = 750 } of       |
| 8  | Eye to ear (center)                                 | = 60             |
| 9  | " above "   | = 10             |
| 10 | Length opening of eye                               | = 7              |
| 16 | Notch of flukes to post. insert. dorsal.            | = 290            |
| 17 | " " " " " pectoral                                  | = 670            |
| 18 | Length pectoral (tip to head of humerus)            | = 142            |
| 19 | " " " " post insertion                              | = 90             |
| 20 | " " " " ant "                                       | = 121            |
| 21 | Greatest breadth of pectoral                        | = 27             |
| 22 | Height of dorsal (vertical)                         | = 32             |
| 23 | Flukes tip to tip.                                  | = 245            |
| 25 | Depth notch of flukes                               | = 15             |
| 27 | Length left lobe axially                            | = 132            |
| 32 | " " blowhole straight                               | = 27             |
| 33 | Dist. apart " anteriorly                            | = 2.51           |
| 33 | " " " " posteriorly                                 | = 16             |
| 37 | <del>Snout to notch</del>                           | <del>= 195</del> |
| 39 | Dist between male mammae                            | = 9              |
| 41 | Longest plate of baleen (inside)                    | = 581            |
| 42 | Number " "  | = 293            |
| 44 | " of <sup>baleen</sup> dorsal furrows (betw. furrs) | = 42             |
|    | Out-post. length dorsal                             | = 451            |

3484

skeleton taken

No. 3

Killer (Orca orca) ♀ Apr. 8/10 Oshima ~~Shikoku~~ Id.

I was given time to photograph & measure carefully this specimen and also to compare it with the figure given by True in his "Delphinidae" a copy of which I had with me. His figure is excellent and could hardly be improved upon - only a few <sup>very</sup> ~~unimpor-~~ <sup>important</sup> details ~~as~~ I noted <sup>it</sup> which the specimen differed from the figure.

Color

Tandy

General color black - by pulling off one layer of the epidermis the color below was seen to be very dark neutral tint which is probably the color in life. An elliptical white spot running fore & aft on <sup>each</sup> side of head. The anterior point of this spot <sup>projects</sup> ~~is~~ about ~~two~~ <sup>four</sup> cent. ~~in front~~ beyond eye and about five cent. above it; the length (longitudinal) of this spot was 60 cent. - its greatest breadth was 17 cent. On the side of the back, opposite the posterior insertion of the dorsal fin was a roughly crescent-shaped patch of purplish. This was ~~very~~ indistinct, and its edges were not well defined. It was of same shape, size & position as the white patch shown in True's figure. ~~Sides~~ <sup>Sides</sup> thin, & throat & breast to pectorals white. White extends from corner of mouth backward and downward to about 7 or 8 cent. beyond anterior insertion of fin. The white extends considerably above a line drawn from corner of mouth to

ant. insertion of fin. Just at corner of mouth the black projects into the white in a small semi-circle. The white runs down between pectorals below & extends backward along the median ventral line. The white does not come up close under the fins ~~at~~ ~~a short narrow~~ The white area is broad between the fins narrowing as it goes backward until at its narrowest point it is 20 cent. wide. It then curves abruptly upward & backward along the sides of the peduncle. At the point where it curves backward on the sides the white band is 56 cent. wide. ~~On~~ The central line of the trident runs backward to a little behind vent. Above the genitalia the white is 44 cent. wide; the black above the genitalia is 25 cent. wide. On the sides of the peduncle the white ends 120 cent. from insertion of flukes (anterior) On the central white line ~~between~~ <sup>a little in front of</sup> the mammillae is a black patch.

The upward curve of the white area on the sides, begins 238 cent. from anterior insertion of fin, and ends 120 cent. from insertion of flukes (anterior)

### Flukes

Above black. Below white except for a black band 2 inches wide which runs along the posterior margins, across the

tips & on the anterior edges for about ten inches from the tips, where it runs off & is lost. The white of the lower surface extends ~~forward~~ <sup>forward</sup> in a triangular patch on the inferior edge of the peduncle about 8 or 9 inches ~~of~~ anterior to the insertion of the flukes.

The anterior edge of the flukes was almost straight except near the tips where it curved to meet the posterior edge. The posterior edge was slightly concave near the tips, then curved very gradually anteriorward ~~to the notch~~ until it turned rather abruptly inward to form the notch. The median ventral ridge of the peduncle is low <sup>& rounded</sup> on the inferior surface, & loses itself about four inches from the bottom of the notch.

On the superior surface of the flukes the dorsal median ridge of the peduncle is more prominent than below and extends nearly to the notch.

Black above & below -

Pectoral  
fin

Pectoral  
fin



Dorsal fin

Black - Anterior edge ~~slightly~~ convex toward tip - posterior edge - concave forming a shallow crescent. The fin is better described as being erect and not deeply falcate.

Head <sup>Prof.</sup> ~~view~~ The head is roughly triangular in shape. From the pectoral fins to the eye, ~~that~~ it narrows gradually, but in front of the eye the two sides slope more abruptly to the snout which is "roundly truncated".

A photograph taken after the head had been severed from the body, shows that it is not quite bilaterally symmetrical.

Side view A few inches from the tip of the mandible there is a pronounced dip in the outline of the throat. The snout projects ~~a~~ cent. beyond the lower jaw. It rises abruptly & then slopes gradually upward & backward to the blowhole.

From the corner of the mouth, there is a white edging to the upper lip. This white band is about one inch wide at the corner of the mouth gradually narrowing as it runs forward until it runs off & is lost before it quite reaches the middle of the lip.

Hairs

I examined the snout, lower jaw & head with the greatest care to see if any hairs were present - none whatever

could I find, nor were there any evidences of their ~~presence~~ having been any.

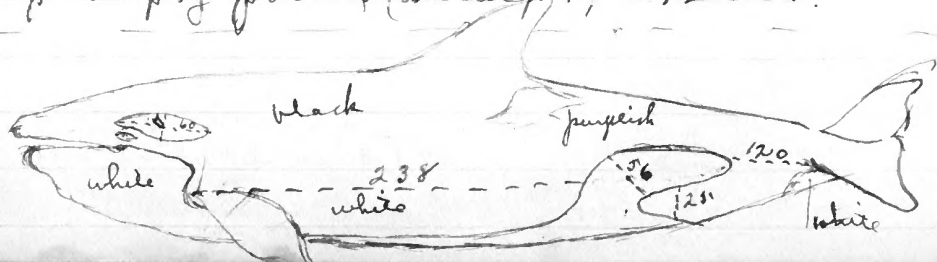
Corrections of figure published by Truitt "Delphinoides"

The dip in the chin is more abrupt & pronounced than is shown in the figure. The upper edge of the white spot above eye is more curved than shown in figure - that is the spot is more nearly regularly elliptical. The white of the throat runs down closer to <sup>superior</sup> base of pectoral and trends in a curve instead of an angle as shown in figure. The superior edge of the white mark on the peduncle is more convex (not so flat) than in figure. There is too much dip in the superior anterior of the peduncle, in the figure - this is nearly straight. No white edging is shown on the proximal half of the upper lip as figured.

[These are all probably only individual differences & have but little importance]

### Blowhole

It is an irregularly semicircular slit the convex horns pointing forward. The blowhole is situated in a slight depression in the top of the head. Length curved = 16 cent. Length from tip to tip of points (straight) = 12 cent.

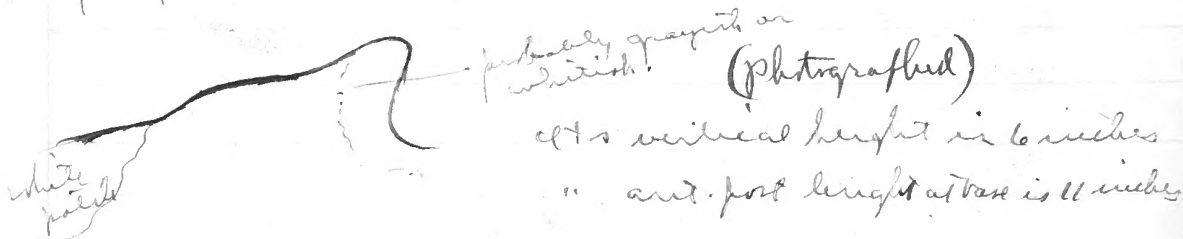


eye

The eye is situated 11 cent. above the corner of the mouth and 10 cent. behind it. The opening is 4 cent. in length & is elliptical. There are no creases either above or below eye.

The tongue was yellowish white & 50 cent. long by 21 cent. greatest breadth.

The stomach contained the dorsal fin & part of the skin immediately in front of it, of a porpoise. The fin is shaped like this.



Blubber on back of Killer thickest just above pectoral in median line - here it is 5.5 cent. thick - as it goes backward the thickness increases until on peduncle just above genital in mid dorsal line it is 17 cent. thick. (this is not the thickest place)

| #9 Measurements of Killer (Orca orca) |   | cent.  |
|---------------------------------------|---|--------|
| 1                                     | Total length (snout to flukes over back)  | = 670  |
| 2                                     | Semi-cir. of body just behind fins <del>from</del> from mid dorsal line to mid ventral line | = 220* |
| 3                                     | Snout to eye  | = 74   |
| 4                                     | " " ear   | = 103  |
| 5                                     | " " blowhole (center)   | = 88   |
| 6                                     | " " post. insertion of pectoral   | = 168  |
| 7                                     | " " " " " dorsal  | = 331  |
| 8                                     | Dist. from eye to ear (center)  | = 35   |
| 9                                     | Ear below eye   | = 7.5  |
| 10                                    | Length opening of eye   | = 4    |
| 11                                    | " " " " ear   | = .2   |
| 12                                    | Notch of flukes to anus   | = 205  |
| 13                                    | " " " " clitoris  | = 280  |
| 14                                    | " " " " mammary slit  | = 224  |
| 15                                    | " " " " umbilicus   | = 393  |
| 16                                    | " " " " post. insertion of dorsal   | = 840  |
| 17                                    | " " " " " " " pectoral  | = 520  |
| 18                                    | Length pectoral, tip to head of humerus   | =      |
| 19                                    | " " " " " " post. insertion   | = 78   |
| 20                                    | " " " " " " ant. "  | = 100  |
| 21                                    | Greatest breadth of pectoral  | = 59   |
| 22                                    | Height dorsal (vertical)  | = 70   |
| 23                                    | Flukes tip to tip   | = 195  |
| 24                                    | Greatest breadth flukes (ant-post.)   | = 59   |
| 25                                    | Depth notch of flukes   | = 11   |
| 26                                    | Length right lobe " " (axially)   | = 101  |
| 27                                    | " " left " " " "  | = 104  |

\* The whale had been lying about 17 hours & was considerably swelled by gas - no air had been pumped in whale

|    |  |       |
|----|--|-------|
| 28 | Greatest thickness of flukes at insertion                | =     |
| 29 | Depth of peduncle at ant. inst of flukes                 | = 5.2 |
| 30 | " " " midway between insertion<br>of flukes & anus.      | = 8.5 |
|    | Length of blowhole (straight)                            | = 12  |
|    | " " " (curved)   | = 16  |
| 35 | Length of anus   | = 6   |
|    | " of genital slit  | = 43  |
| 38 | Length " mammary slit                                    | = 12  |
| 39 | Dist. between mammae                                     | = 27  |
| 43 | Upper jaw extends beyond lower                           | = 2.5 |
|    | Height of dorsal (axially)                               | = 83  |
|    | Ant. fin breadth dorsal at base                          | = 60  |
|    | Corner of mouth to tip of snout                          | = 66  |
|    | Dist. between ant. insert. of pectorals <sup>below</sup> | = 80  |
|    | " " post. " " " "  | = 90  |
|    | Ant. post. breadth pectoral fin at insertion             | = 37  |

### Osteology

Ribs 11 prs.

Five ribs joining sternum



skeleton taken 8 p.m.

no. 4

Sei whale ♀ Apr. 13 / 10 @shima

This whale was pulled out upon the ship & my measurements were carefully taken so they can be relied upon fully.

color

color? described at night

~~Left side top of head is dark slate except for a~~  
~~band (along edge of septum) <sup>from eye forward</sup> in front of eye~~  
~~about three feet long and one foot wide;~~  
~~this band is a little lighter in color than~~  
~~rest.~~ Right side top of head is dark slate like  
 left side except for a broad area of lighter  
 slate which runs from eye nearly up  
 to blowholes & then diagonally forward  
 & downward <sup>half way to</sup> end of snout; therefore  
 the greater part of this side is of the lighter  
~~slate color.~~ Back & the superior one third  
 of sides are dark slate as top of head - rest  
 lower two thirds of sides <sup>excepting</sup> light gray - at  
 navel the gray of the sides comes down  
 & runs across belly in a band  
 about 3 ft. wide - the ~~navel is situated~~  
~~in the center of this band.~~ <sup>The furrows here are much darker gray than the folds.</sup> The dark slate  
 of the back & upper sides comes down  
 to the insertion of the flukes - From  
 the tip of the under jaw the throat & breast  
 are white; <sup>the furrows are pinkish</sup> 17 folds on the breast are  
 white. <sup>is only in the furrows &</sup> The pinkish color does not  
 extend up to <sup>root of</sup> fins underneath; ~~and~~  
 under the right fin 11 folds are dark  
 gray - about the same number  
 under the left fin although I did not

P. navel  
position

count the exact number - Directly under the corners of the mouth on left side 20 folds are dark gray - From the end of the creases or furrows to the flukes the gray comes down nearly to the ventral line, which is pinkish. ~~On the~~ ~~finbacks~~ The pinkish ventral area narrows gradually from the genitalia backward until it becomes a very narrow line. On

Left ramus of mandible has lower one half light gray - upper  $\frac{1}{2}$  slate or dark gray. The edges of the snout for 12 inches on either side are light gray -

Flukes

Under surface of flukes light gray - about same color as sides of peduncle - caused by very fine lines - the posterior edges are dark slate as are tips and the anterior edge for a few inches from tips. Above flukes are slate.

Pectorals

Right (Photographed) The superior surface has the anterior edge light gray, caused by the light color of the below running up over the edge on to the superior surface for about 2 inches for its whole length. The remainder of the fin is blue-slate becoming darker slate to near posterior edge. Below, the anterior half of the fin for its whole distance is light gray

- the posterior one half is slate, except near the proximal end where the slate changes to dark gray.


### Baleen

There are 315-plates of baleen on the left side counting all plates two inches or more in height.

The first 207 plates of baleen have more or less white along their inner edges; this white is in longitudinal streaks & decreases gradually toward the posterior part of the baleen row - the ~~remainders~~ <sup>remaining</sup> 108 plates are all very dark ~~black~~ <sup>bluish black</sup> - much darker than the Fairback baleen. Along the inner base of the baleen row for whole length is a line of plates from two to three inches high & one half inch wide. These are white & with their white bristles make a <sup>white</sup> band about five inches high along inner base of baleen row. The bristles of the anterior fourth of the baleen row ~~are~~ <sup>are</sup> all white - the second fourth have the tips tinged with grayish for about four inches, the third fourth have about eight inches of tips grayish & the bristles of the last fourth are almost all grayish & except for the white base line. When one first looks at the baleen of the sei whale he ~~baldly~~ gets quite a different impression than

that obtained by a careful examination.  
 This description was written at my  
 leisure ~~at~~ while examining carefully  
 the baleen of this whale. ~~For a~~ <sup>For a</sup> ~~the~~ <sup>the</sup> des-  
 cription of baleen of whale no. 2 one  
 should refer to this. The baleen of that  
 whale was as nearly like this specimen  
 as possible.

External  
Characters

The distance between the tips of ~~baleen~~  
 the two rows of baleen at the widest  
 point was 85 cent. (as they were setting  
 in position). The superior edge of the  
 peduncle does not descend to the flukes quite  
 so abruptly as it does in the Blue Whale.  
 At the ant. insertion of the flukes the  
 peduncle is 42 cent. wide & 78 cent. deep.  
 The folds are about 3 cent. wide at  
 heart - are narrower at throat & wider  
 where they end.

These measurements of the fin were taken  
 (ant. & post insertions) before the pectoral was  
 cut off & while it was extended at right  
 angles from the body.

Ribs 14 pairs - the last pair being rudimentary  
 First ribs on both sides have bifurcated heads  
 Skeleton taken so full description can be  
 written later)

## Measurements of no. 4

|                     |   |        |
|---------------------|---|--------|
| 1                   | Total length                              | = 1350 |
| 3                   | Tip of snout to eye                       | = 280  |
| 5                   | " " " " blowhole                          | = 220  |
| 6                   | " " " " post insertion of pectoral        | = 465. |
| 10                  | Length opening of eye                     | = 8    |
| 14                  | Notch of flukes to mammary slit           | = 385- |
| <del>15</del><br>17 | " " " " post insertion of pectoral        | = 890  |
| 18                  | Length pectoral (tip to head of humerus)  | = 187  |
| 19                  | " " (" " post. insertion)                 | = 152  |
| 20                  | " " " " ant. "                            | = 165. |
| 21                  | Greatest breadth of pectoral              | = 40   |
| 24                  | " " " flukes ant-post.                    | = 90   |
| 26                  | Length right lobe axially                 | = 170  |
| 28                  | Greatest thickness of flukes at insertion | = 17   |
| 29                  | Depth peduncle at ant. inst. of flukes    | = 78   |
| 37                  | Anus to navel                             | = 400  |
| 39                  | Dist. between mammary                     | = 12   |
| 40                  | Length row of baleen (straight)           | = 275- |
| 41                  | " longest plate of baleen (insert)        | = 70   |
| 42                  | Number of plates of baleen                | = 315- |
| 44                  | Number of breast furrows between fins     | = 32   |

10 P.M.

No. 5.

ColorBody

Sea whale ♀ Apr. 13/10 Oshima

Top of head, left side, dark slate - the upper edges of the snout for a short distance from the end on either side are grayish - underneath this changes to pinkish which extends ~~backward~~ <sup>backward</sup> for 1/35 cent, from tip of snout

Left ramus of mandible has upper  $\frac{2}{3}$  light slate & lower  $\frac{1}{3}$  iridescent gray. Right ramus is light gray for the whole distance - in front of ~~the~~ dorsal fin to head the back and upper sides are dark slate - behind dorsal the upper  $\frac{1}{3}$  of the peduncle is dark slate like back - <sup>from fins backward</sup> the sides of peduncle are ~~alternating~~ many dark & light ~~over~~ (small) areas - the light areas seem to be composed of fine wavy lines or "graining" - also a great many small white scars.

On breast between fins are 22 white folds - furrows are pinkish - there are 9 dark folds under right fin.

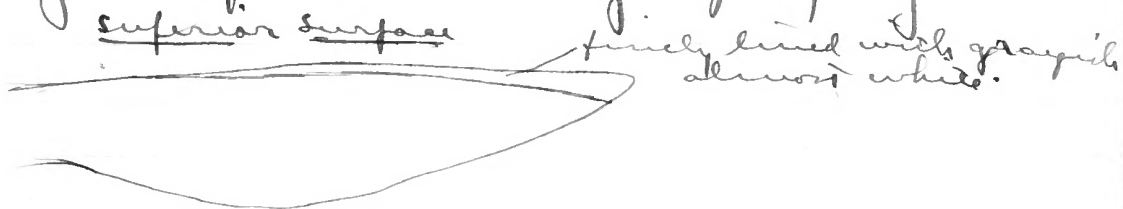
~~Pectorals~~

The pink area ~~te~~ (ventral) becomes narrower as it goes backward until when it reaches peduncle it is very narrow - same as in the other whales I have described.

Pectorals Above slate except anterior edge which



is light for almost whole distance but the light is very narrow toward proximally end. Under surface of both fins is very light gray



### Baleen

Bundles of 1st one fifth of baleen row all white - 2nd ~~one~~ fifth has tips grayish - in 3rd fifth tips grayish for about 8 or 10 inches - in 4th fifth grayish for half their length from tips downward - last fifth all grayish.

For 30 cent. from tip of baleen row on either side plates all white.

### Eye

Length of pupil = 15 mil

Dia. " " = 11 "

Length of iris = 38 "

Dia. " " = 23 "

Cir. of eyeball (trimmed) = 310 mil.

Pupil elliptical - then comes iris of dark brown (much darker than in Finback) which is 12 mil wide - then just a suggestion of a bluish-white ring or edging to the next wide ring which is almost black & runs off into the gray of the eyeball; this blackish ring is 19 mil. wide - eyeball is elliptical

Dorsal

These measurements were taken from the eye before it was put in alcohol. It was carefully compared with the eye of a Finback taken the next day. The eyeball is much more elliptical than is that of the Finback. Very high <sup>& rounded - fleshy</sup> (photographed). By peeling off portions of the epidermis I found the color to be gray slate, with little if any blue <sup>(red)</sup> in it. This is probably the true life color of the back & head also. The Finback dorsal was neutral tint <sup>(red)</sup> with a good deal of blue? mixed with black & white, would get it. It was decidedly purplish which is probably life color & is what I have described the Alaska Finbacks to be.

Measurements of Sea Whale (taken in sections)  
 (the total of 3 sections)

|    |  |        |
|----|--|--------|
| 1  | Total length (Summit to notch.)        | = 1460 |
| 3  | Summit to eye straight.                | = 287  |
| 10 | Eye opening.                           | = 7    |
| 14 | Notch of flukes to mammary slit        | = 425  |
| 16 | " " " " post. base dorsal              | = 445  |
| 18 | Length pectoral tip to head of humerus | = 193  |
| 19 | " " " " post. insert.                  | = 135? |
| 20 | " " " " ant. "                         | = 170  |
| 21 | Breadth pectoral                       | = 37   |
| 22 | Height dorsal (vertical)               | = 44   |

19.6 cm to eye

31

|    |   |        |
|----|---|--------|
|    | Height of dorsal (axially)              | = 65-  |
|    | Length (ant - part. at base)            | = 80   |
| 23 | Flukes up to tip                        | = 355- |
| 27 | Length left lobe axially                | = 195- |
| 29 | Depth peduncle at ant. insert of flukes | = 85-  |
| 30 | " " between flukes & anus               | = 135- |
| 38 | Length of mammary slit                  | = 18   |
| 39 | Dist. between mammary                   | = 18   |
| 40 | Length baleen row                       | = 285- |
| 41 | " longest baleen plate (inside)         | = 73   |
| 44 | number throat furrows                   | = 40   |

2 P.M.

No. 6

Finback ♂ Apr. 14/10 Oshima

This whale was brought in about 2 P.M. so I was able to get a few photographs.

The "total length" is the total of three sections.

Color  
Body

Upper sides & back neutral tint (seen by pulling off the upper epidermal layer) — the ridge of back <sup>on</sup> peduncle neutral, the rest of the upper sides & sides Isabellan gray (the neutral tint of the back extends down from the median line only about 12 inches on either side) Left ramus dark slate — Right ramus has the anterior half all whitish shading into <sup>the</sup> light gray of the posterior half. As in the Alaska Finbacks the gray of the sides comes farther & farther down toward the mid ventral line as it goes backward until about 3 ft in front of the flukes only the very ventral ridge of the peduncle is white — a little way behind the genitalia the ventral white strip is 15 inches wide. The throat, breast & belly are white, (folds) with dark furrows, as in ~~Alaska~~ Alaska Finbacks, Under right fin 3 folds are gray.

Pectorals

The tips of both fins have been injured — I photographed both inferior & superior surface.

Under side (Right) has ant.  $\frac{2}{3}$  whitish gray shading running over post.  $\frac{1}{3}$  from

edge. Above ant. edge whitish for whole length - rest of upper surface gray. Both fins are the same. On under side left fin two <sup>deep</sup> fresh scars, cup shaped, evidently where parasites had been lodged.

Baleen

I counted all baleen plates on left side from very back plate 2 inches high to front plate 2 inches high - there were 332 in all on this side.

On the right side (anterior) ~~28~~ plates were white - the edge of the snout underneath is whitish for the length of the white portion of baleen.

Anterior two thirds of baleen plates have bristles light grayish at tips - (very front ones are not so, but are white) posterior  $\frac{1}{3}$  have bristles all grayish, darker at tips.

Eye

Pupil nearly round - iris very widely elliptical - Iris of brown - iris is 12 mil. wide - then a white ring 4 mil. wide - then brown ring 10 mil wide which runs off into gray of eyeball. Eyeball is very widely elliptical - almost round.

Length of pupil - - - - 20 mil.

Dia " " - - - - 17 "

Length " iris - - - - 45 "

Dia " " - - - - 30 "

Cr. of eyeball (trimmed) - - - 375 "

(this white portion measured 65 cent. in length)

@sterology  
skull

These measurements were taken when the skull had been cleaned & are correct.

Length (straight) (from tip of premax. to condyles taken below) = 477 cent.

Breadth (squamosal) = 180 "

Length of jaw (straight) = 450 "

" " " (curved) = 485 "

### Measurements of Finback No 6

|    |  |        |
|----|--|--------|
| 1  | Total length (total of three sections)   | = 1865 |
| 3  | Snout to eye                             | = 401  |
| 5  | " " blowhole (center)                    | = 347  |
| 10 | Length eye opening                       | = 9    |
| 12 | Notch of flukes to anus                  | = 510  |
| 16 | " " " " post. vert. of dorsal            | = 475  |
| 18 | Length of pectoral (tip to head humerus) | = 230  |
| 19 | " " " " " post. vert.                    | = 145  |
| 20 | " " " " " ant. "                         | = 195  |
| 21 | Greatest breadth pectoral                | = 60   |
| 22 | Height dorsal (vertical)                 | = 43   |
| 2  | " " (axial)                              | = 75   |
|    | Ant-post length dorsal at base           | = 85   |
| 31 | Length right blowhole straight           | = 44   |
| 32 | " left " "                               | = 41   |
| 33 | Dist. apart " (anteriorly)               | = 5    |
| 34 | " " " (posteriorly)                      | = 25   |
| 40 | Length row of baleen                     | = 400  |
| 41 | " longest plate of baleen                | = 80   |
| 42 | Number plates " " (left side)            | = 332  |
| 43 | " " " " in white part                    | = 98   |

Snout to base dorsal = 1390  
41 = 74.5



10 p.m.

No. 7

Blue whale ♂ April 14/10 Oshima

The length of this whale was the total of three sections.

Color  
Body

The top of the head is almost as light gray as are the markings - it is solid color - at blowholes it is darker - the light ~~to~~ markings extend (on left side) forward to the eye ending there in very small patches - On the left side of the body as far as the end of the fin the light color is almost solid, broken in only a few places by the darker ground color. On the sides of the peduncle from the fin backward to the flukes the light & dark colors are about equal in quantity - the light color is in small patches - just forward of flukes there is more dark than light - Along the ridge of the back from fins to flukes the ~~light~~ dark color predominates - but there are also many rather small light markings - On the sides the light markings follow downward along the ends of the furrows closely but do not run over one to the fold - Just above the left fin the light color is almost solid - The light gray markings which follow the ends of the folds

©sterology  
skull

These measurements were taken when the skull had been cleaned & are correct.

Length (straight) (from tip of premax. to condyles taken below) = 477 cent.

Breadth (squamosal) = 180 "

Length of jaw (straight) = 450 "

" " " (curved) = 485 "

Measurements of Fishback No 6

|    |  |        |
|----|--|--------|
| 1  | Total length (total of three sections)   | = 1865 |
| 3  | Snout to eye                             | = 401  |
| 5  | " " blowhole (center)                    | = 347  |
| 10 | Length eye opening                       | = 9    |
| 12 | Notch of flukes to anus                  | = 510  |
| 16 | " " " " post. inst. of dorsal            | = 475  |
| 18 | Length of pectoral (tip to head humerus) | = 230  |
| 19 | " " " " " post. inst.                    | = 145  |
| 20 | " " " " " ant. "                         | = 195  |
| 21 | Greatest breadth pectoral                | = 60   |
| 22 | Height dorsal (vertical)                 | = 43   |
| 2  | " " (axial)                              | = 75   |
|    | Ant-post length dorsal at base           | = 85   |
| 31 | Length right blowhole straight           | = 44   |
| 32 | " left " "                               | = 41   |
| 33 | Dist. apart. " (anteroventrally)         | = 5    |
| 34 | " " " (posteriorly)                      | = 25   |
| 40 | Length row of baleen                     | = 400  |
| 41 | " longest plate of baleen                | = 80   |
| 42 | Number plates " " (left side)            | = 332  |
| 43 | " " " " in white part                    | = 98   |

41 = 74.5

Sum of base dorsal = 1390

10 p.m.

35

No. 7

Blue Whale ♂ April 14/10 Oshima

The length of this whale was the total of three sections.

Color  
Body

The top of the head is almost as light gray as are the markings - it is solid color - at blowholes it is darker - the light markings extend (on left side) forward to the eye ending there in very small patches - On the left side of the body as far as the end of the fin the light color is almost solid, broken in only a few places by the darker ground color. On the sides of the peduncle from the fin backward to the flukes the light & dark colors are about equal in quantity - the light color is in small patches - just forward of flukes there is more dark than light - Along the ridge of the back from fins to flukes the ~~light~~ dark color predominates - but there are also many rather small light markings - On the sides the light markings follow downward along the ends of the furrows closely but do not run over on to the folds - Just above the left fin the light color is almost solid - The light gray markings which follow the ends of the folds

meet at the genitalia but from navel to genitalia an mid-ventral line they do not meet & this is plain - from the genitalia backward to pectorals on the ventral line the light & dark markings are about equal.

There is a patch of dark about five feet long & two feet wide (irregular) from the posterior insertion of dorsal forward on the left side.

Right ramus of mandible is gray-lighter than the top of the head (which is the same color as the dark of the body). On throat (median) are a few small ash colored markings.

On the folds white markings come down from root of each fin diagonally backward & downward directed toward navel (but only a few scattered ones reach navel). There are only a very few small scattered white markings on very mid-ventral line forward of navel. There are a few ashy markings on breast between fins but no white ones - no white patch below fins -

Dorsal Dorsal is lined as usual - the ant-edge is very light - almost white -

Flukes

Above considerably darker gray than sides of body. Below are gray (darker than no. 1) gray for whole surface except a narrow posterior edging tan the tips which are dark -

defects of  
noted as  
taken.


Pectorals

Above dark gray except tips and the ant.  $\frac{2}{3}$  of ~~fin~~ ant. edge. - These parts are white - below white.

both fins same

lower  $\frac{1}{2}$  of ant edge here  
is white

External notes

A fresh parasite scar at ant. end of blow holes, shaped like this  This one elliptical cup is about one inch deep and contains a lining which may be pulled out, leaving the ~~f~~ blubber exposed.

Capt. Nelson tells me that it is a "shellless barnacle" which fastenes here. Evidently the parasite lets go & fixes itself when the whale is killed. It could not be a barnacle like those on the Hump-back (Coronula) for this fellow could not let go. Also the scars are nothing like those left by Coronula.

Between fins one fold is 6.5 cm. wide.  
 These same scars were found on  
 both the Sei whale + Finback.

Osteology Length of skull (straight) from tip of  
 premax. to condyles below = 590  
 Breadth squamosal = 250  
 Length jaw straight = 560  
 " " curved = 600

### Measurements

|    |                                       |                |
|----|---------------------------------------|----------------|
| 1  | Total length (taken in sections)      | = 2275         |
| 3  | Snout to eye                          | = 506          |
| 12 | Notch of flukes & anus                | = 625(?)       |
| 16 | " " " " post. int. dorsal             | = 515          |
| 17 | " " " " " " pectoral                  | = 1440 (50 ft) |
| 18 | Length pectoral (tip to head humerus) | = 365          |
| 19 | " " " " post. int.                    | = 255          |
| 20 | " " " " ant. "                        | = 325          |
| 21 | Greatest breadth pectoral             | = 90           |
| 23 | Flukes tip to tip                     | = —            |
| 24 | Greatest breadth flukes (ant-post)    | = 130          |
| 25 | Depth notch                           | = 20           |
| 26 | Length right lobe axially             | = 275          |
| 28 | Depth peduncle between flukes & anus  | = 215          |



No. 8

Blue Whale ♂ Apr 15/10 Oshima

Total length of this whale was taken straight.

Color  
Body

Top of head left side is mostly rather light gray (but not as light as body markings). From opposite the genitalia the sides of the peduncle back to the flukes is mostly small light gray markings - also here there are many scattered white dashes & markings - On ventral surface just above the genitalia for about one foot on either side the darker gray predominates and backward to midway between flukes & anus <sup>the</sup> darker gray predominates - from there on to flukes the ventral line is light gray like ~~the~~ sides of peduncle. Between the navel & anus on ventral line the darker gray is found. From the dorsal fin to flukes the light gray markings run over mid dorsal line. The light gray markings of the upper sides run close down to base of fin above, and down on <sup>the</sup> six of the folds between corner of mouth and anterior insertion of fin. The light gray markings follow the ends of the furrows but do not come so close to ends as in No. 7 Blue Whale.

On belly folds from a short distance behind fins there are many small ash colored markings - also a few scattered white ones. Six folds under left fin are whitish - an irregular line 3 ft long of white dashes comes obliquely downward & backward from posterior insertion of fin. There is then a break of 18 inches in the white line of dashes and then it begins again reaching nearly to median line, half way between fins & navel. These white dashes are about 2" in. long & 3" in wide. ~~On~~ Five folds directly under ~~right~~ <sup>right</sup> fin are whitish (but not the furrow) On breast between fins are a few ash colored markings.

On upper sides & back directly ~~between~~ above navel is a large patch of almost solid light gray markings - The navel is white.

The right ramus of the mandible is of a lighter gray than are folds of the throat.

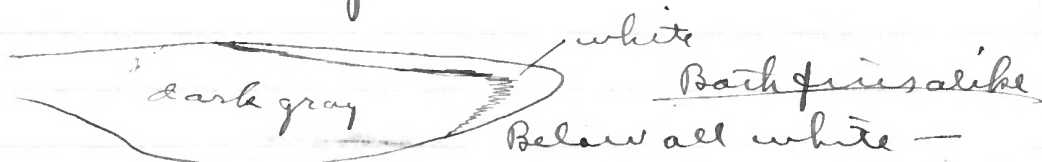
Dorsal

Photographed

Anterior edge very light gray shading <sup>laterally</sup> into the gray color of the body markings - Very light gray lines start from ant. edge & run downward over sides as in

all the other Blue Whales - tip & posterior edge is dark gray - post. edge has been injured.

Pectorals



Above dark gray except ~~ant~~ edge & tip as shown in drawing.

The peduncle is covered with small scars & "blisters" which give it a crinkled appearance.

Male mammary situated on either side of ventral line 30 cent. behind penis base.

Measurements of No 8

|    |  |          |
|----|--|----------|
| 1  | Total length - (Taken straight along side)     | = 2205   |
| 3  | Snout to eye                                   | = 512    |
| 12 | Notch of flukes to anus                        | = 587    |
| 13 | " " " " penis (center)                         | = 717    |
| 15 | " " " " navel                                  | = 927(?) |
| 16 | " " " " post. vert. dorsal                     | = 507    |
| 17 | " " " " " " <sup>taken straight</sup> pectoral | = 1400   |
| 18 | Length pectoral (tip to head humerus)          | = 317    |
| 19 | " " " " post. vert.                            | = 226    |
| 21 | Breadth pectoral                               | = 87     |
| 22 | Height of dorsal (vertical)                    | = 31     |
| 35 | Length anal opening                            | = 16     |
| 38 | " mammary slit (male)                          | = 28     |
| 39 | Dist between " "                               | = 20     |
| 40 | Length row of baleen                           | = 480    |
| 41 | " longest " plate                              | = 120    |

Photographed

External Characters

2 a.m.

no. 9 - Finback - ♂ - May 20 - Aikawa

This whale was drawn out upon the slip so that measurements are all correct.

ColorBody

I did not have an opportunity to observe carefully the top of the head.

On the side a ~~dark~~ gray<sup>ish</sup> band comes down backward from root of fin below; it is about 2 ft. long & 1 ft. wide. The second band which is dark gray (much darker than first) is the same size & runs down & back at same angle & begins opposite end of fin laid back.

On throat the central area has bottoms of furrows pinkish & sides of throat has them dark. The same condition extends for whole length backward except on belly about opposite tip of fin laid back where all furrows are dark except very median ventral ones.

Right side ramus very light gray (almost white) especially toward the tip. Between the corner of mouth and right fin the grayish of the lower back runs down onto folds about 2½ ft - at corner of mouth a very dark band runs backward not quite reaching fin insertion - On the throat between the corners of the mouth 16 furrows are pinkish & the rest are dark.

The first dark band extends on 12 or 13 folds - the 2nd band on 4 or 5 folds, but bands are 2 ft. long.

n. 13

The inside of the right ramus is dark slate  
inside " " left " " light gray.

Mentale Left fin injured at tip - below white  
except grayish at base, along post.  
edge and at tip. white runs over on  
to superior surface along anterior  
edge - rest of above is slate.

Flukes Below base posterior edge, anterior edges  
& tips dark gray - rest all white - post-  
erior edging is darker than anterior,  
above dark slate. Notch overlaps

$\gamma_{12.5}$

Dorsal Dark slate - dorsal is high recurved  
& has a deep notch in post. edge at base.

Baleen Bristles of baleen <sup>almost</sup> all tinged with gray-  
ish - the only pure white ones being the  
very anterior plates - going backward  
the bristles become more strongly gray  
and especially so at tips

(For measurements see  
opposite page)

21.6

Measurements Fairback No. 9

|    |  |        |
|----|--|--------|
| 1  | Total length                           | = 1845 |
| 3  | Snout to eye                           | = 400  |
| 6  | " " post. nist. pectoral               | = 630  |
| 8  | Eye to ear (center)                    | = 84   |
| 12 | Notch of flukes to anus                | = 573  |
| 16 | " " " " post. nist. dorsal             | = 425  |
| 17 | " " " " " " pectoral                   | = 1240 |
| 18 | Pectoral tip to head of humerus        | = 224  |
| 19 | " " " " post. nist. dorsal             | = 1451 |
| 21 | Greatest breadth pectoral              | = 53   |
| 22 | Height dorsal (vertical)               | = 39   |
| 23 | Flukes, tip to tip                     | = 4151 |
| 24 | Greatest breadth flukes ant. post.     | = 108  |
| 25 | Depth notch                            | = 251  |
| 26 | Length right lobe axially              | = 219  |
| 27 | " left " " "                           | = 219  |
| 29 | Depth peduncle at ant. nist. of flukes | = 85   |
| 30 | " " midway between " " "               | = 1518 |
| 36 | Anus to base of penis                  | = 135  |
| 37 | " " umbilicus                          | = 361  |
| 44 | Number of throat furrows               | = 74   |

Sum of dorsal = 1428



109. m.

no. 10

Finback ♀ May 20 / 10 Aikawa

This whale contained a male foetus about 18 inches long; it is preserved in alcohol.

Color

Left ramus dark gray - right ramus light gray - inside left ramus light gray - inside right ramus dark gray.

Pectoral

Below ~~has~~ distal  $\frac{1}{3}$  all gray except ant edge - middle  $\frac{1}{3}$  has anterior half white & post. half gray - the proximal third is the same

Dorsal

All slate. This fin is unlike any I have seen before it is long & narrow, not having the broad base of others - it is roughly finger shape <sup>broadening</sup> ~~spreading~~ but comparatively little at the base.

Baleen

Bristles of anterior  $\frac{1}{3}$  are white; ~~of~~ middle  $\frac{1}{3}$  have gray tips - last  $\frac{1}{3}$  all gray.

Two creases run out of corner of mouth - center of eye 20 cent. above corner of mouth.

Measurements over page.

# Measurements of Furbock No. 10

|    |                                     |         |
|----|-------------------------------------|---------|
| 1  | Total length                        | = 1980  |
| 3  | Eye to snout                        | = 440   |
| 5- | " " blowhole (center)               | = 377   |
| 8  | " " Ear (Ear not certainly located) | = 68(?) |
| 9  | " above "                           | = 13    |
| 10 | " opening                           | = 10    |
| 18 | Petiole tip to head of humerus      | = 243   |
| 19 | " " " post. insertion               | = 160   |
| 21 | " greatest breadth                  | = 60    |
| 40 | Length of baleen row (straight)     | = 435-  |
| 42 | " " longest plate of baleen         | = 86    |

no. 11 Finback ♂ May 22/10 Aikawa

Color

Left side of head darker than right - it is dark neutral tint - right side gray slate, the light color extending behind eye & front of eye half way to tip of snout - Inside left ramus light gray for lower half - upper half slate - right ramus inside all slate. Left outside is <sup>dark</sup> slate - right outside is very light.

Pectorals

Below - a grayish band eight inches wide runs along posterior edge - at tip all except a narrow anterior edging is grayish - Rest of under part of fin is white - Above all slate - white not running over and upper surface along the anterior edge as is usual. Tips of both fins have been injured.


Head

On the left side 180 cent. from tip, and 35 cent. from edge of snout is a large scar evidently made by a harpoon. The scar is in the form of an irregular opening 28 cent. long which runs almost straight downward thru' the rostrum. The inside of the scar is covered with black skin. On the lower side it opens in the midst of the baleen & here the baleen has grown together

into three heavy bunches which are white & set loosely in the skin. On the inside of the left ramus are many small scattered scars such as would be produced by the bursting of a harpoon bomb.

I had an opportunity to examine carefully the head of this whale & as it was typical will describe its shape in detail.

A cross section of the head directly in front of the blowholes would be this



The median ridge, which is highest immediately in front of the blowholes runs forward, becoming lower & less pronounced until it is lost entirely, 105 cent. from the tip of the snout. Opposite to the anterior ends of the blowholes, <sup>on either side</sup> 50 cent. from the median ridge, a low, broad, hump-like ridge begins which runs forward along the edges of the rostrum to the tip. Its summit is rounded. As the central ridge is lost 105 cent. from the end of the rostrum and as the two side ridges persist to the extreme tip,

therefore the distal portion of the rostrum is concave. ~~At the base~~ For the entire length of the median ridge the spaces between it & the side ridges present to shallow concavities or troughs.

### Hairs

There were a few scattered hairs about blowholes, and along both edges of the rostrum, there were none on the very median line. On the mandibular symphysis the arrangement of the hairs is the same as in the Alaska Finbacks viz. two irregular lines on either side of the low median ridge, & two other shorter & more irregular lines outside of these. Other hairs are scattered about in no definite arrangement.

### Rostrum

I measured the rostrum by sections before the blubber had been stripped from the edges.

86 cent. from tip rostrum is 80 cent. wide.  
 125 " " " " " 95 " "  
 175 " " " " " 106 " "  
 285 " " " " " 145 " "  
 330 " " " " " 205 " " this

is across the eyes.

Three folds run out of corner of mouth and four furrows —

I could not be certain but I believe there were 16 prs. of ribs.

20.0

Eye

One furrow is 45 cent. long, next is 60 cent. next 75 cent. next 90 cent.

The posterior corner of the eye is directly above the inside corner of the mouth. The pupil of eye is 3 cent. in front of corner of mouth & 16 cent. above it.

Baleen

All bristles are gray save the anterior ones which for a distance of 60 cent. are white toward back bristles are very dark gray, almost brown.

Measurements

|    |  |        |
|----|--|--------|
| 1  | Total length                             | = 1805 |
| 3  | Snout to eye                             | = 361  |
| 5  | " " blowhole (center)                    | = 310  |
| 6  | " " post. inst. of pectoral              | = 625  |
| 8  | Eye to ear (center)                      | = 90   |
| 10 | " opening                                | = 9    |
| 11 | Ear "                                    | = 3    |
| 19 | Pectoral tip to post. inst.              | = 150  |
| 20 | " " " ant. "                             | = 195  |
| 21 | " greatest breadth                       | = 52   |
| 24 | Greatest breadth flukes ant-post         | = 103  |
| 26 | Length right lobe (axially)              | = 206  |
| 31 | " " blowhole straight                    | = 43   |
| 32 | " left " "                               | = 44   |
| 33 | Distance apart <del>for</del> anteriorly | = 3    |
| 34 | " " " posteriorly                        | = 20   |
| 40 | Length baleen row (straight)             | = 345  |

4.20 P.M.

No 12 Finback ♂ May 22/10 Aikawa  
Color Left side top of head is dark slate or  
 neutral - Right side has lighter semi-  
 circular area running upward  
 and forward from fin as far as eye hole and forward  
 along outer half of rostrum not  
 reaching tip. On the top of the head  
 are irregular light patches looking  
 as tho the epidermis had been rubbed  
 off. Back and extreme upper sides  
 are slate - on left side a light band  
 runs to eye. The under ~~of~~ edge of the  
 snout is flesh pink for same distance  
 as white portion of baleen.  
 Left ramus very dark slate (almost  
 black) & ~~for~~ <sup>onto</sup> 14 folds below the corner of  
 mouth this color extends. This dark  
 color is narrower near distal end  
 of ramus & widens as it goes  
 backward.  
 Right ramus <sup>& side of chin</sup> very light gray (almost  
 white) shading into the white of the  
 central throat. A very dark patch  
 or band runs backward out of  
 corner of mouth -  
 The gray of the sides comes down very  
 far on the peduncle leaving only a  
 narrow mid ventral strip white. The  
 peduncle & lower sides are a beautiful  
 asabella gray - Instead of two  
 narrow bands of gray running down



onto the folds from the root of the fin  
 & from the tip of fin laid back, the  
 gray is in two very wide bands, &  
 are almost solid. They are broken  
 by a narrow band of whitish from  
 tip of fin laid back & a broad white  
 streak from the root of the fin.  
 In other words the gray bands are  
 on this whole so broad that they  
 cover all but the two ~~narrow~~ streaks  
 of white mentioned above.

12 folds under the left fin are dark.

21 dark furrows under right fin.

14 folds under eye left side are dark  
 shading off into white.

10 furrows between fins are flesh  
 colored - rest are dark.

Pectorals Right below white except for gray posterior  
 border & tip - gray covers all of tip  
 except very anterior edge. On the  
 upper surface the white from below  
 runs ~~along~~ up over anterior edge.  
 notch flukes not lapped

21.0

## Measurements of no. 12

|    |                                      |        |
|----|--------------------------------------|--------|
| 1  | Total length                         | = 1860 |
| 3  | Snout to eye                         | = 392  |
| 10 | Eye opening                          | = 10   |
| 12 | Notch of flukes to anus              | = 550  |
| 16 | " " " " post. vent. dorsal           | = 445  |
| 18 | Pectoral (tip to head of humerus)    | = 233  |
| 19 | " " " " post. vent.                  | = 146  |
| 20 | " " " " ant. " "                     | = 203  |
| 21 | " greatest breadth                   | = 57   |
| 22 | Height dorsal (vertical)             | = 37   |
| 23 | Flukes tip to tip                    | = 436  |
| 24 | Greatest breadth flukes (ant. post.) | = 108  |
| 25 | Depth notch of flukes                | = 20   |
| 26 | Length left lobe                     | = 230  |
| 40 | Length row of baleen                 | = 385  |
| 41 | " longest plate baleen               | = 90   |
| 4  | " white patch in " "                 | = 170  |

Snout to dorsal = 445 - 76.0%

8 P.M.

No. 13

Color

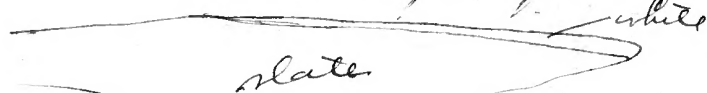
Finback ♂ May 22/0 - Aikawa

A dark whale - much darker than No. 12. Left ramus, and 18 inches of its folds below it for whole length from tip to a little behind ~~of~~ corner of mouth are very dark slate (almost black). The dark area is narrow at distal end of ramus, widening proximally. Fifteen folds under left fin are dark - Thirty-four furrows under left eye are dark & 15 folds are dark - the rest are white.

The slate under the fin is in the shape of two broad bands (almost solid) broken only by two whitish lines, from base of fin & tip of fin laid back, which run obliquely downward & backward.

The dark edging below is fairly heavy.

The white of the lower surface runs up over the edge (ant.) above for the distal  $\frac{2}{3}$  of the fin.



The peduncle is thickly scarred.

FlukesPectorals

20.9

## measurements of No. 13

|    |  |             |
|----|--|-------------|
| 1  | Total Length   | = 1860      |
| 3  | Snout to eye   | = 390       |
| 12 | Notch to anus  | = 515       |
| 13 | " " penis (center)   | = 643       |
| 15 | " " navel  | = 868       |
| 16 | " " post. inst. of <sup>dorsal</sup> pectoral                    | = 450       |
| 17 | " " " " " pectoral   | = 1275      |
| 19 | Pectoral tip to post. <sup>inferior</sup> of <del>anterior</del> | = 165       |
| 20 | " " " anterior insert.   | = 230       |
| 21 | " greatest breadth   | = 53        |
| 22 | Height dorsal-vertical   | = 451       |
| 23 | Flukes tip to tip  | = 410       |
| 24 | Breadth flukes (ant-post)  | = 100       |
| 25 | Depth notch  | = 20        |
| 26 | Length right lobe axially  | = 240 (220) |
| 29 | Depth peduncle at ant. inst. flukes                              | = 85        |
| 36 | Anus to penis  | = 128       |
| 37 | " " navel  | = 353       |
| 44 | Number of throat furrows   | = 76        |

sum of dorsal 410 + 75.8 = 485.8

no. 14

Color.

Blue whale ♀ May 24/10, Oskawa  
 a very light whale. The back from  
 tip of fin and back is gray with  
 scattered light <sup>gray</sup> markings, to ~~about~~  
 nearly <sup>opposite</sup> root of fin. Rest of the back  
 (posteriorly) is thickly marked with  
 light gray, on the peduncle being  
 almost solid. The sides of the ped-  
 uncles are not only thickly covered  
 with very light gray markings,  
 but also many rather small  
 white scars. This gives the peduncles  
 the same "crinkled" appearance  
 which I observed on <sup>one</sup> ~~the~~ Blue whale  
 at Oskawa.

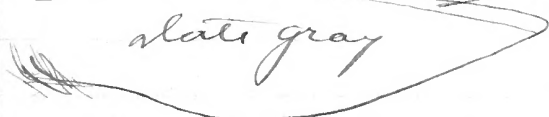
Under the fin is a large white  
 patch and a line of scattered  
 white markings run obliquely  
 downward & backward from it.  
 Also on the side folds directly  
 opposite navel are many white  
 markings.

Rounds light bluish slate, & throat  
 folds under it are ~~a little~~ darker  
 slate. On the throat folds there  
 are no white markings but a  
 few ash ones on breast.

Pectoral

(Photographed) Above has proximal  
 $\frac{1}{3}$  all slate gray & distal  $\frac{2}{3}$  has ant.  
 edge white, this band becoming

broader toward tip. Tip is injured.  
Below all white <sup>white</sup>



Dorsal

Has anterior sides light caused by the rather faint grayish lines running down & back from anterior edge. Tip is dark gray & has been injured as also has post. edge.

Flukes

Flukes have central portion white thinly lined with rather coarse gray lines - the anterior edge is heavily lined & the posterior edge is almost solid as ~~and~~ the tip. The under side is different from the majority of blue whales, viz; the white is more distinct & the curving lines are broader & not so close together. I have seen only one or two others like this specimen.

Measurements over page

|    |   |        |
|----|---|--------|
| 1  | Total length  | = 2380 |
| 3  | Snout to eye <sup>(should be less correct)</sup><br>(taken in 2 sections) | = 470  |
| 12 | Notch to anus   | = 720  |
| 16 | " " part. inst. of dorsal   | = 560  |
| 17 | " " " " " pectoral  | = 1490 |
| 18 | Pectoral tip to head of humerus   | = 360  |
| 19 | " " " " part. insertion   | = 245  |
| 20 | " " " " ant. " "  | = 310  |
| 21 | " " greatest breadth  | = 88   |
| 22 | Height dorsal (vertical)  | = 19   |
| 24 | Greatest breadth flukes (ant. part.)                                      | = 125  |



No 14a Forster Blue whale ♀ May 24/10 Aikawa  
 mother is no. 14 millimeters

|    |   |        |
|----|---|--------|
| 1  | Length over back                        | = 1660 |
| 2  | Cir. of body opp. tip of fins laid back | = 880  |
| 3  | Snout to eye                            | = 330  |
| 5  | " " blowhole center                     | = 260  |
| 6  | " " post. inst. pectoral                | = 620  |
| 7  | " " " " dorsal                          | = 1270 |
| 8  | Eye to ear (center)                     | = 130  |
| 9  | " above ear                             | = 8    |
| 10 | Opening of eye                          | = 18   |
| 12 | Notch of flukes to anus                 | = 560  |
| 14 | " " " " mammary slit                    | = 600  |
| 15 | " " " " navel                           | = 820  |
| 16 | " " " " post. inst. dorsal              | = 470  |
| 17 | " " " " " " pectoral                    | = 1120 |
| 18 | Pectoral tip to head humerus            | = 300  |
| 19 | " " " " post. inst                      | = 220  |
| 20 | " " " " ante " "                        | = 260  |
| 21 | " greatest breadth                      | = 70   |
| 22 | Height of dorsal ventral                | = 32   |
| 23 | Flukes tip to tip                       | = 430  |
| 24 | " greatest breadth ant-post             | = 170  |
| 25 | " depth notch                           | = 30   |
| 26 | Length right lobe (axially)             | = 255  |
| 27 | " left " "                              | = 248  |
| 29 | Depth peduncle at ant. vent flukes      | = 125  |
| 30 | " " between " "                         |        |
|    | and anus                                | = 190  |
| 31 | Length right blowhole straight          | = 45   |

|    |                               |       |
|----|-------------------------------|-------|
| 32 | Length left blowhole straight | = 40. |
| 33 | Dist. apart " anteriorly      | = 4   |
| 34 | " " " posteriorly             | = 35. |
| 38 | Length of mammary slit        | = 20  |
| 39 | Dist. between " " S           | = 23  |
| 44 | number of throat furrows      | = 65  |

The rudimentary teeth in this specimen were well developed.

No. 15-

Color

Finback ♀ juv. May 25/10 Aikawa  
 Back slate ~~a light white~~ - the slate reaches on to the side 90 cent. from the mid-dorsal line, opposite the tip of the fin laid back.

Left ramus bluish-white at distal end shading into very light gray proximally - Right ramus very dark slate.

The sides & peduncle light drab or light gray -

Fin

Ant. edge white for whole length above rest blue-gray - Below posterior edge has edging one inch wide of grayish and distal  $\frac{1}{4}$  of fin is grayish - all rest white below.

Flukes

Flukes white below, except tips, posterior edge nearly to notch, and anterior edge dark slate. The slate on anterior edge is narrow near insertion of flukes & toward tips becomes broader. The posterior dark edging is about 8 inches wide. The notch is not lapped.

Bristles

Bristles are all yellowish white, except the proximal  $\frac{1}{6}$  which are grayish for whole length of plates. There are 90 white plates in the white portion on the right side - the white portion shades gradually into the dark edged plates. [14 prs of ribs sure]

## Measurements of No 15

|    |   |         |
|----|---|---------|
| 1  | Total length  | = 1135- |
| 3  | Snout to eye  | = 202   |
| 5- | " " blowhole (center)                                     | = 170   |
| 6  | " " post. inst. of pectoral                               | = 350   |
| 8  | Eye to ear center   | = 50    |
| 9  | " above "   | = 8     |
| 10 | " opening   | = 7     |
| 11 | Ear "   | = 4     |
| 14 | Notch of flukes to mammary slit                           | = 404   |
| 16 | " " " " post. inst. <sup>dorsal</sup> <del>pectoral</del> | = 330   |
| 17 | " " " " " " pectoral                                      | = 805   |
| 18 | Pectoral tip to head humerus                              | = 150   |
| 19 | " " " post. inst.   | = 100   |
| 20 | " " " ant. "  | = 130   |
| 21 | " greatest breadth  | = 36    |
| 22 | Height dorsal   | = 20    |
| 23 | Flukes tip to tip   | = 245   |
| 27 | Length left lobe axially                                  | = 137   |
| 28 | Greatest thickness flukes at inst.                        | = 23    |
| 29 | Depth peduncle at " "                                     | = 25-   |
| 30 | " " between " & anus                                      | = 137   |
| 40 | Length row of baleen                                      | = 190   |
| 41 | " longest " plates  | = 35-   |
| 42 | Number of plates of baleen <sup>one side</sup>            | = 306   |
| 43 | Lower jaw extends beyond upper                            | = 16    |
| 44 | Length white portion of baleen                            | = 40    |

Snout to dorsal = 805 = 70.9%

4.45-9. M.



no 16

Finback ♂ May 28/10 Aikawa

This whale was not drawn entirely out of the water upon the slip, so it was necessary to take the length in two sections - it is undoubtedly correct. Was taken along back as usual.

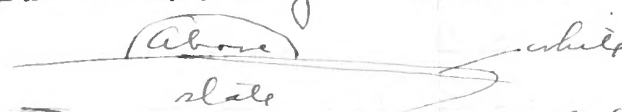
Color

Rather a dark whale. Back is slate shading into <sup>light</sup> gray on the sides & lower sides - slate covers back nearly down to root of fin.

<sup>below ramus</sup> Left ~~side~~ ramus & upper side of throat <sup>for about 18 inches</sup> very dark slate (almost black) ~~etc~~ There are 11 dark folds under left eye - and 32 x dark furrows - that is all the furrows on the left side of throat from the very median line are dark. There are 14 pink furrows on throat between eyes, there being therefore entirely on the right side. The two gray bands under the fin are very broad being broken only by the two light bands from the root of the fin to the tip laid back - these light bands are very narrow.

Right ramus is very light gray - it is lightest at tip (here almost white) and gets darker gradually toward the proximal part. The inside of the right ramus is dark slate inside left ramus is light gray -

Pectorals Above slate - distal  $\frac{2}{3}$  has ant. edge whitish - tip injured - Below white, having tip, posterior edge + ~~proximal~~ <sup>anterior</sup> edge grayish.



Bristles Dirty or yellowish white, except tips which are gray. The posterior plates for about 18 inches have bristles all brownish-gray. Balcon begins 16 cent from tip of snout. The white portion of the balcon on the right side is 70 cent. in length. But plates which have their lower halves white & upper dark (outer edges) extend for 20 cent. further. Thus the white portion fades gradually off into the dark. Mucous membrane in roof of mouth is purplish white - rather flesh colored blotched with purple.

Hairs The hairs on the mandibular symphysis were 25-mil. long and embedded for half their length. They were " very loosely & could be pulled out with little difficulty, were dirty white.

Ribs 14 pairs of ribs (sure)  
Skull Length straight below = 415 cent.  
Jaw " " jaw = 405 "  
 " curved " = 470 "

18.4

15.9 bluntnose

65

## Measurements No. 16

|    |                                |        |
|----|--------------------------------|--------|
| 1  | Total length                   | = 1910 |
| 3  | Snout to eye                   | = 352  |
| 5  | " " blackside                  | = 305  |
| 8  | Eye to Ear (center)            | = 86   |
| 9  | " above "                      | = 7    |
| 10 | " opening                      | = 9    |
| 11 | Ear "                          | = 3    |
| 12 | Notch flukes to anus           | = 535  |
| 13 | " " " penis                    | = 665  |
| 15 | " " " navel                    | = 858  |
| 16 | " " " post. insert. dorsal     | = 430  |
| 17 | " " " " " pectoral             | = 1240 |
| 18 | Pectoral tip to head humerus   | = 205  |
| 19 | " " " post insertion           | = 125  |
| 20 | " " " ant. "                   | = 170  |
| 21 | " greatest breadth             | = 30   |
| 24 | Flukes " " ant-post            | = 90   |
| 36 | Anus to penis                  | = 130  |
| 37 | " " " navel                    | = 323  |
| 40 | Length baleen row              | = 340  |
| 41 | " length baleen plate          | = 92   |
| 44 | Number dorsal furrows          | = 64   |
| 1  | Length white portion of baleen | = 70   |

Snout to dorsal = 1480 = 77.4



9 P. M.

no 17

Finback ♂ May 29/10 Aikawa

This whale was measured by the cutters and as the head was well under water I can be by no means sure that the length as taken was correct.

Color

A dark individual. Left side top of head slate. Right side, toward + at the side of blowholes I could distinguish lighter color but the remainder of the right side seemed to be the same as the left side top of head. Right ramus white at tip shading backward into very light French gray - many white "scars" on ramus. Between the very dark band running out of corner of the mouth right side reaches half way to the fin insertion.

Between the corner of the mouth & the fin, right side <sup>there is</sup> an irregular patch of gray ~~runs downward~~ which covers 13 folds. The grayish covers the entire space & forms a rough semi-circle between these two points. At the root of the fin a rather small & indistinct grayish band goes down to back obliquely - there is then a whitish space to about half the length of

the fin laid back, a gray band 4 ft. long & 18 inches wide, runs down & back. This band is well marked & square at the distal end. Next & comes a whitish space & then opposite the tip of the fin laid back, a third short band begins which merges into the gray of the sides.

Left ramus very dark slate & for 18 inches below it are the upper ends of the folds. The dark slate of the ramus shades into gray gradually as it goes back toward fin.

From the end of the folds on the sides, <sup>opposite</sup> the genitalia the line of light gray is almost straight; it then begins to slant down regularly to the flukes, ~~where it is~~ reaching within two or three inches of the mid-ventral line at the flukes insertion. The gray goes into the white of the sides rather abruptly; many white scars on the peduncle.

|    |   |          |
|----|---|----------|
| 1  | Total length (measured by whalers along side) | = 60 ft. |
| 16 | Notch of flukes to post. inst. of dorsal      | = 440    |
| 18 | Pectoral tip to head of humerus               | = 200    |
| 21 | " greatest breadth                            | = 55     |
| 29 | Depth peduncle at ant. inst. of flukes        | = 80     |

(Tip of pectoral badly injured)

9 P. M.

no. 19

Sei whale ♂ June 8/10 Aikawa

Color


A dark whale

This whale was drawn entirely out upon the ship and I took the measurements with the greatest care. I did not get an opportunity to examine carefully the back or ~~the~~ top of head - ~~hunched~~ observation showed it to be dark slate.

The <sup>lower</sup> left lip & rames of mandible has the upper half dark gray and the lower half very light gray becoming almost white at tip. Inside of right rames & tip is dark slate. The <sup>central part of</sup> throat and breast are white to a point about opposite the middle of the fin laid back. Here a band about 125 cent. in width with irregular margins, which extends back to a point a little behind the navel runs <sup>down</sup> from the sides entirely across belly. This band is gray & considerably darker than the lower sides of the peduncle. <sup>The folds just in front of this dark band are</sup> ~~known the inclined to pinkish light~~

On the left side of the body, under the dark gray from the upper half of the lower lip extends backward becoming wider & wider until ~~about~~ between corner of mouth & eye anterior insertion of pectoral it spreads ~~outward~~ outward & downward in a <sup>large</sup> ~~irreg-~~ular blotch <sup>with irregular margins</sup> ~~which extends~~. Directly under the left fin this dark area

The ~~lower~~ edges of the snout on either side for a distance of 30 cent. are light. This corner folds in interit with the white <sup>upper</sup> portion of the baleen on each side.

covers 14 folds: <sup>(it is considerably darker than the sides of the body.)</sup> From a point about opposite the navel the dark slate of the back shades off gradually into gray on the lower sides which covers the entire ventral line from the anus to the flukes. ~~On the ventral portion~~ <sup>line</sup> from a little behind navel to the anus ~~has~~ there is a narrow area of light pink. The sides of the body are covered with small <sup>gray</sup> oblong spots (having rounded corners) which seem to be composed of fine wavy lines radiating outward from a common center.  as in this sketch. (I have noticed many similiar markings on the Finbacks & Blue whales here, and on the Finbacks of Alaska & Vancouver Id. whether or not they are caused by a parasite I have not yet determined.) There were also a great number of white scars on the sides of the body which were undoubtedly produced by a parasite ~~circu~~ <sup>circu</sup> of some sort, as I found fresh ~~scars~~, pits, some partly healed, & others entirely so. I saw <sup>several of</sup> the fresh pits were granular ~~lines~~ membranes evidently left by the parasite when it was detached from its host. On the Finbacks & Blue whales the same pits ~~were~~ & scars were found.

n. B. they are  
eyes,  
July 31/10

I did not have an opportunity to examine the right side of this whale carefully, but from hurried observations I believe that the right ramus was mostly light gray and that a ~~similar~~ dark gray blotch similar to the one on the left side, was present under the fin. There was also a distinctly lighter area near the left eye but how far it extended I could not tell as the blubber was removed before I had a chance to describe it. (See no 4)

### Flukes

The central portion of both lobes of the flukes (below) is light gray about like the <sup>lower</sup> sides of the peduncle. The distal half of each lobe as well as a wide <sup>band</sup> ~~along the~~ <sup>anterior</sup> & anterior edges is dark gray. Above the flukes are dark gray like the back.


### Pectorals

The upper surface of the fin is blue-slate which lightens somewhat along the <sup>anterior</sup> ~~outer~~ edge <sup>of the distal half of fin</sup> ~~from the middle of the fin forward~~. Below, the anterior half of fin for the whole length is light blue gray which shades off very gradually into <sup>the</sup> darker gray of the posterior half. The color of the lower <sup>surface</sup> ~~half~~ seems to be ~~given~~ ~~off~~ produced by extremely fine ~~very~~ lines which

# Eye

Situated on a slight swelling - above it is one long convex furrow 18 cent. in length - ~~the~~ this furrow is 6 cent. above anterior commissure of eye - between its eye are two short lines or creases - below eye a crease 24 long ~~between~~ curves - it is 5 cent. below ant. commissure - 2 furrows 6 cent. long run out of ant. corner of eye

71

run from the tip down the posterior border curving obliquely off toward the anterior edge; near the base of the fin the lines run in a curve across fin from post. to ant. edge. These lines are so extremely fine that it looks  like solid color and can only be detected upon close examination.

The lower half of the anterior edge is light gray. The upper half " " is darker gray, the line of division being well marked.

The fin is narrowly lanceolate, <sup>or triangular</sup> in shape. The anterior edge is (almost straight) very slightly convex. The posterior edge swells gradually anterior and <sup>from the tip</sup> ~~is~~ <sup>is</sup> a long curve ~~until~~ <sup>until</sup> about middle of fin is reached, when it turns very gradually inward to the posterior angle which is not strongly marked. The fin is widest <sup>a little behind</sup> ~~about~~ the middle of its length, and it is here that the anterior edge is thickest. From that point the ant. edge tapers gradually toward tip ~~until it~~ becoming thin. The posterior edge is thin but fairly rigid until the point of greatest breadth is reached, when from there to the axilla the posterior edge is loose skin



& blubber. (Both sides photographed)

Dorsal

The dorsal fin is large & high, ~~that is~~ <sup>the dorsal fin</sup> is deeply ~~concave~~ and deeply falcate. The tip "over hangs" so greatly that it will not stand erect, bending to either side. The color is dark slate like the back. (Photographed)

Baleen

It was impossible to get a very good view of the baleen of this whale while it was intact as the light was poor. However all the bristles of the <sup>distal</sup> ~~anterior~~ half of the rows seemed to be all white. The <sup>bristles</sup> ~~tips~~ of the proximal half were all grayish, <sup>at the tips</sup> ~~and~~ the very proximal portion (about 1/6 of the entire row) had bristles all grayish. I counted carefully the plates on the left side from the very anterior bristles two inches high to the posterior ones. There were but 290 on this side.

The anterior plates of baleen for 16 cent. on each side were <sup>all</sup> yellowish white.

~~The~~ I examined carefully all the baleen plates which were spread out to dry in the sun upon the slip.

The color of the baleen is very hard to describe in as much as it changes



with the angle of light. ~~When examined~~  
~~in the sunlight~~ All the dark portions  
 of the plates <sup>in both shells</sup> possessed a marked irides-  
 cence. ~~At~~ At one angle the color of  
 the plate was a beautiful blue; at another  
 angle the color was light green. When  
 examined out of the sun the color was  
 a deep blue-black, <sup>with a marked irides-</sup> which however  
 changed to a lighter shade when held at  
 a different angle. Along the inner  
 basal edge, the majority of the plates  
 have longitudinal bands of yellowish  
 white, which shades into gray and  
 finally runs imperceptibly into the  
 blue black of the main <sup>portion of the</sup> plate. The  
 width of the white & gray bands varies  
 greatly; some plates had a white band  
 35 to 40 mil. wide shading into a gray band  
 of similar breadth. These were the most  
 anterior ones of the row. Others had only  
 a narrow edging of gray. My study  
 of the valve of No. 4 showed that this  
 white basal stripe is widest at the  
 anterior portion of the valve row  
~~running~~ becoming less & less toward  
 the back until it is lost entirely  
 in the posterior  $\frac{1}{3}$  of the row.

Three hundred & eleven plates were  
 spread upon the slip to dry. Out of

this number 230 had <sup>new or less</sup> white or gray along the edge. Eighty-one plates ~~only~~ showed no lighter color. Of course these plates were only those which were of commercial value.

All the plates are transversely rugose, in proportion to the size of the plate the ridges being fully as prominent as those of the Finbacks or Blue whale. As in the two latter, the ridges are most prominent in the basal portion of the plate (The bristles of all these plates were yellowish white except at the tips of the plates where the coarse bristles became grayish or brownish.)

### Osteology

#### Scapula

The right scapula of this whale was saved, cleaned, measured & photographed.

- 1 Height (vertical) = 575 mil.
- 2 Greatest breadth = 960 "
- 3 Length acromion (median) = ~~110~~ " 260
- 4 " coracoid " = ~~260~~ " 110
- 5 Ant. post. length glenoid fossa = 200 mil.
- 6 Width <sup>acromion</sup> ~~coracoid~~ = 90 mil.
- 7 " <sup>coracoid</sup> ~~acromion~~ distally = 40 mil.

The scapula is widely fan-shaped. The suprascapular edge is <sup>thin &</sup> remarkably flat, dipping at a sharp angle to meet the posterior edge <sup>and extending till a regular</sup> which is straight after

it rises above the neck of the scapula. The coracoid edge ~~is irregularly convex: & meet~~ the suprascapular border ~~meets it in a~~ regular curve

curve to meet the coracoid border. ~~The edge is very thin. The posterior edge of the scapula~~ is straight after it leaves the neck of the scapula; the coracoid edge is irregularly convex.

The <sup>acromion</sup> ~~coracoid~~ is long, slightly curved <sup>inward</sup> & is directed outward & somewhat upward. It is about the same breadth throughout.

The <sup>coracoid</sup> ~~acromion~~ is directed inward & downward. It narrows gradually & is 40 mil. ~~wide~~ broad at its distal end.

The prescapular fossa is not well defined.

manus

The formula of the phalanges is  
 II III ~~IV~~ V (taking as the 2nd digit the external one at the

end of the radius which would correspond with the index finger)

Length of 2nd digit including metacarpal = 480 mil

" " 3rd " " " = 710

" " 4th " " " = 600

" " 5th " " " = 340

(over)

Last phalanx of 2<sup>nd</sup> digit is 25 mil. long

" " " 3<sup>rd</sup> " " 15 " "

" " " 4<sup>th</sup> " " 40 " "

" " " 5<sup>th</sup> " " 30 " "

The last phalanx of the 3<sup>rd</sup> digit is 16 mil. from the ~~extremity~~<sup>extrem tip</sup> of the fin.

The last phalanx of the 4<sup>th</sup> digit is 60 mil. from the edge of the fin.

It will be seen that the formula for the phalanges of this specimen is unlike that of Sei whale no 2. which

~~The latter formula~~ is II III IV V

4 6 5 2

yet I am absolutely positive that both are correct. The fins of both specimens were dissected by myself with the greatest care & there is no possibility that any of the phalanges of no. 2 were overlooked.

Carpals

There are 5 carpal ossifications - 3 in the proximal row & 2 in the distal row. The ossification opposite the base of the 4<sup>th</sup> & 5<sup>th</sup> digit is the largest of them all. The one next to it is a little smaller & the one next to this is still smaller.

The two of the distal row are small. The pisiform cartilage is prominent & had just begun to ossify - it is 75 mil. long.

Rostrum

~~Measurements of Sei whale no. 19~~  
<sup>edges of the</sup>  
 The rostrum for ~~the~~ the proximal  $\frac{2}{3}$  of its

length are almost straight. They then turn rather abruptly inward meeting at an acute angle.

Measurements no. 19

|    |   |         |
|----|---|---------|
| 1  | <del>Snout to eye</del> Total length    | = 135.0 |
| 3  | Snout to eye                            | = 27.0  |
| 5  | " " blowhole                            | = 22.5  |
| 6  | " " post. insert pectoral               | = 49.0  |
| 8  | Eye to ear                              | = 7.3   |
| 9  | " above "                               | = 9     |
| 10 | " opening                               | = 7.5   |
| 11 | Ear "                                   | = .5    |
| 12 | Flukes to armpits                       | = 36.5  |
| 13 | " " penis                               | = 43.0  |
| 15 | " " navel                               | =       |
| 16 | " " post. insert of dorsal              | = 41.0  |
| 17 | " " " " " pectoral                      | = 92.0  |
| 18 | Pectoral tip to head humerus            | = 18.0  |
| 19 | " " " post. insert.                     | = 11.7  |
| 20 | " " " ant. " "                          | = 14.6  |
| 21 | " greatest breadth                      | = 3.8   |
| 22 | Dorsal, ventral height                  | = 4.5   |
| 23 | Flukes tip to tip                       | = 33.0  |
| 24 | " ant. post breadth                     | = 9.8   |
| 25 | " depth notch                           | = 2.0   |
| 26 | " length right lobe axially             | = 17.8  |
| 27 | " " left " "                            | = 18.5  |
| 28 | Thickness flukes at insertion<br>(over) | = 2.2   |

|    |                                  |       |
|----|----------------------------------|-------|
| 29 | Depth peduncle ant. iust. flukes | = 70  |
| 31 | Length right blowhole (s.t.)     | = 36  |
| 32 | " left " "                       | = 36  |
| 33 | Dist. apart " ant.               | = 4   |
| 34 | " " " post.                      | = 23  |
| 39 | Length baleen row                | = 263 |
| 41 | " longest plate                  | = 75  |
| 42 | Number plates baleen (left side) | = 290 |
| 44 | " throat folds                   | = 50  |

8.30 P.M.

No. 20

Finback ♀ June 9/10 Aikawa

This whale, the largest Finback I have so far seen, contained a foetus (♀) about 3 ft. long.

This animal presented peculiarities of coloring such as I have never seen in a Finback before. They were so striking that Mr. Matsumaka, the cutting manager, asked me if I did not think it a cross of Finback & Sei whale. I do not believe that such could have been the case, as the color peculiarities were simply exaggerations of the usual Finback type. The baleen, fins, flukes, etc. were all typically Finback.

Color

I did not have an opportunity to examine carefully the head. The back was neutral tint shading off into light gray on the sides. The tip and right edge of the rostrum <sup>above</sup> were marbled with white, dark slate and brownish gray for a distance of 130 cent. ~~Below~~ On the under side it was ~~for~~ white & light pink. This area ~~was~~ <sup>was</sup> the same extent as the white portion of the baleen row. There was a ~~light~~ semicircular area just in front of left fin which was distinctly lighter in color than back. A similar one appeared to be on the right side but this was stripped before I could examine it carefully.



The sides of the peduncle are light gray which from the anus back leave only a very narrow <sup>white</sup> ventral strip; this is lost entirely about 2 ft. in front of the flukes insertion, the gray covering the ventral line here. Just behind the anus, two narrow points extend obliquely forward from the gray of the lower sides, but do not meet in the mid-ventral line. On the left side all of the furrows from the mid-ventral line are dark.

notice

On either side of the belly opposite the tips of the fins laid back, two gray bands extend downward & backward obliquely meeting on the mid ventral line to form a V, the apex being about four feet in front of the umbilicus. The right arm of the V is solid color - the left arm is broken. A narrow, broken band of grayish extends from the apex of the V back to the navel. Opposite the middle of the fin laid back on the left side is a grayish blotch - on the right side instead of a blotch it has the form of a ~~narrow~~ band which unites with the right arm of the V a short distance from the apex.

Opposite the navel two more bands

come down <sup>from either side</sup> not quite <sup>reaching</sup> meeting the  
 ventral line. (It was the foregoing  
 peculiarities of coloring which suggested  
 the Sei whale to Mr. Matsumura)

## Flukes

Have a wide ant. & posterior border of  
 very dark gray (below) & the tips for  
 one fourth of each lobe are dark gray.  
 The posterior border is much wider than  
 the anterior - Above all slate gray

## Pectorals

Above, fin all slate gray, the ant.  
 edge is white & this shows on its sup-  
 erior surface of the fin ~~as~~ a narrow  
 band for whole length of ant. edge.

Below, white, with much gray along  
 posterior edge of distal half; two narrow  
 parallel gray lines run from tip  
 toward center of fin. There is also  
 a grayish blotch at posterior insertion  
 which extends across fin half way to  
 anterior edge. Tips not injured.

## Measurements

|    |   |         |
|----|---|---------|
| 1  | Total length (measured in sect. by whalers) | = 66 ft |
| 3  | Snout to eye                                | = 414   |
| 8  | Eye to ear                                  | = 94    |
| 9  | " above "                                   | = 7     |
| 10 | " opening                                   | = 10    |
| 11 | Ear "                                       | = 81    |
| 18 | Fin tip to head humerus                     | = 247   |
| 19 | " " " post. fin.                            | = 170   |
| 20 | " " " ant. "                                | = 215   |

|    |  |       |
|----|--|-------|
| 21 | Breadth pericardial                                | = 57  |
| 23 | Flukes tip to tip (estimated from length of lobes) | = 440 |
| 26 | Length right lobe tip to notch along post. border  | = 225 |
| 27 | " left " axially                                   | = 235 |
| 40 | " row of saecum                                    | = 406 |
| 41 | " longest plate                                    | = 90  |
|    | Length white part of saecum (right side)           | = 105 |
|    | 128 white plates in white portion                  |       |

no. 21

Humpback June 9 ♂ juv. Aikawa

Color

Top of head back & sides black - Below, the throat, breast, & belly has a good deal of white which is mostly in small flecks & dashes - many of the folds are edged with white - The white spot is characteristic of the Van. & Alaska Humpbacks was ~~large~~ between the fins on mid ventral line was well marked. Another small patch of pink on mid-ventral line directly below corner of mouth. The eyelids are flecked with white & much white in flecks about eye & corner of mouth. "Peffer & salt" about genitalia & ~~from~~ back to "hump" on lower edge of peduncle, a little white about nard. There are few of the circular & semi-circular markings on scars. A few small white flecks & dots on the upper sides of the peduncle.

Flecks

Black above & below with only a very few white flecks ~~along~~ near tips.

Fins.

Below - white except for an irregular blotch at base, an edging 1 cent. wide along port. edge & a few spots at tip. Black above with a very few white markings ~~near~~ at tip. The fins were colored exactly like typical ones at Van. & Alaska.

Photographed


Eight bunches on ant. edge - 1st is prominent, next two low & rounded,

4th prominent, next 2 low & last two near tip fairly prominent - The 1st - 4th & last two bear barnacles.


Flukes  
(cont.)

The post. edge of the flukes is scalloped as in Alaska & Van specimens. Many barnacles on tips.

External  
characters

The upper edge of the peduncle between dorsal & flukes is crenulated - there are seven "scallops" - low.  There are 10 tubercles along right ramus. Many barnacles on "chin" & fore-throat. The tubercles on top of rostrum seemed to be arranged like those of Van. Humpbacks - I did not count them. Stomach contained Euphausia.

Dorsal

Has a little white along ant. edge & tip. It is low & has typical Humpback shape.  (Photographed)

Baleen

Bristles dirty white - a grayish-brown band along whole length of baleen row at extreme base, except the very anterior portion. Tips of post.  $\frac{1}{2}$  of row all grayish & proximal portion has bristles all gray. Mucous mouth pink.

This whale had a very short head, the under jaw projecting far beyond upper.

## Measurements Humpback no 21

|    |                                |       |
|----|--------------------------------|-------|
| 1  | Total length                   | = 880 |
| 3  | Snout to eye                   | = 217 |
| 5  | " " blowhole                   | = 155 |
| 6  | " " post. inst. fin            | = 310 |
| 10 | Eye opening                    | = 7   |
| 12 | Nostril flukes to anus         | = 220 |
| 15 | " " " navel                    | = 390 |
| 16 | " " " post. inst. dorsal       | = 290 |
| 17 | " " " " " pectoral             | = 610 |
| 18 | Pectoral tip to head humerus   | = 279 |
| 19 | " " " post. inst.              | = 222 |
| 20 | " " " ant. "                   | = 258 |
| 21 | " greatest breadth             | = 69  |
| 22 | Dorsal vertical height         | = 15  |
| 23 | Fishes tip to tip              | = 310 |
| 24 | " ant. post. breadth           | = 94  |
| 29 | Depth peduncle at flukes inst. | = 58  |
| 40 | Ballen row length              | = 207 |
| 41 | " longest                      | = 50  |
| 43 | Lower jaw beyond upper         | = 40  |
| 44 | Number throat folds            | = 28  |

7.30 P.M.

No. 22

Finback ♂ June 10/10 Aikawa

A light whale. On the right side of top of head a light area which has its generic a little anterior to the fin runs up as far as opposite blowholes, a little the other side of the median ridge of the rostrum & shades gradually off into the slightly darker left side. It is lightest near the blowholes & along the edge of the rostrum. The slate color of the extreme dorsal ridge is narrow & shades off gradually into the gray of the sides. The sides of the body from the fin back as far as the ends of the furrows, is darker gray than that of the sides of the peduncle but shades into it very gradually. From the dorsal fin back to the flukes the slate of the mid-dorsal region extends <sup>down</sup> only about 18 inches ~~on to~~ - from the median line shading off then gradually into the light gray of the lower sides. The line of the light gray ~~from~~ runs parallel with the axis of the body until it reaches <sup>a point</sup> ~~a point~~ <sup>off</sup> ~~the~~ <sup>the</sup> peris when it slants obliquely down and back until it just reaches mid-ventral line at the flukes, but no where excludes the white of the mid-



Under the tongue there is a great amount of transparent mucus - probably saline. 87

ventral region. There are a great number of <sup>white</sup> scars on the peduncle, some of them oblong and some irregular + branching white lines about  $\frac{1}{2}$  inch wide +

The gray, oblique band opposite the tip of the fin laid back is short + not heavy on ~~the left side~~ on either side. There is only a suggestion of ~~lighter~~ the oblique gray band which usually runs down from the root of the fin. On the right side under the fin, 13 furrows are dark + the remaining ones pink (light). Under the corner of the mouth on the right side 18 folds are gray - the dark band running out of the corner of the mouth is short.

The right ramus + lip are very light gray proximally + ~~white~~ shading into white distally, (except the extreme edge of the lip which is ~~dark~~ gray). The very light gray of the proximal half of ramus shades very gradually into darker gray at the fin insertion. The right lip + ramus is dark gray inside.

The left ramus + lip are dark gray, the dark shading off gradually into the white of the throat. Under the left corner of the mouth 14 folds are dark gray -

The points of gray running forward to snout even obsolete.

Below white - the distal  $\frac{1}{3}$  marbled with gray -  
the anterior edge white throughout - post.  
margin gray - gray ~~at~~ blotch at root.  
Above all slate.

Measurements No. 22

|    |                                    |        |
|----|------------------------------------|--------|
| 1  | Total length (taken by cutters)    | = 1830 |
| 3  | Snout to eye                       | = 393  |
| 5  | " " blackhole                      | = 340  |
| 8  | Eye to ear                         | = 93   |
| 10 | " opening                          | = 13   |
| 11 | Ear "                              | = 3    |
| 12 | Notch of flukes to anus            | = 525  |
| 16 | " " " " post. vent. dorsal         | = 440  |
| 18 | Pectoral tip to head humerus       | = 235  |
| 19 | " " " " post. vent.                | = 150  |
| 20 | " " " " ant. "                     | = 208  |
| 21 | " breadth                          | = 52   |
| 22 | Height dorsal vertebrae (serrated) | = 20   |
| 23 | Flukes tip to tip                  | = 370  |
| 39 | Length baleen row                  | = 380  |
| 43 | Lower jaw beyond upper             | = 20   |
|    | white portion of baleen length     | = 110  |

no. 23

Finback ♀ June 11/10 Aikawa

a grayish band (faintly marked) about 3 inches wide, curves upward then downward from ear to eye; about ear this grayish area is wider (blubber 76 cut just back of ear) (Ear is a narrow slit 8 cent. long - longer than usual). Out of the post. corner of its ear a whitish band  $\frac{1}{2}$  inch wide runs backward. Left ramus very dark gray. The general color of whale is very light.

The two narrow gray points which extend forward to anus below are strongly marked.

Fin.

Below has distal half all gray - 2 darker gray bands marking the course of the 3rd & 4th digits come from tip a little more than ~~half way to base~~ of middle of fin. The posterior gray margin extends in a sweep across base almost to anterior edge - anterior edge is delicate flesh pink above all blue gray. The tip of the left fin has been "chewed". It shows ~~the~~ ~~the~~ tooth marks very distinctly. It looks as tho a Killer had caught hold of the tip & the whale had pulled it out of his mouth, "shredding" the whole tip. The could not have been done by sharks.

Balena

Bristles of whole baleen row (except white posterior) have gray tips, this becoming of greater extent

posteriorly until the last  $\frac{1}{5}$  of the row is all gray. (Therefore my theory that the younger whales have whiter blisters is exploded)

### "Blisters"

On the peduncle and sides of this whale were many "blisters". The epidermis was raised like a "water blister". When pulling the epidermis off these places I found a narrow valley below extending thru the dermis to the blubber beneath. The edges of the ~~dermis~~ about this ~~for~~ valley were "rotten" & could be easily scraped. There were several of these spots in process of healing which showed the light wavy lines, altho I found no parasites on this whale I am sure they must have been caused by them. Whether or not they were the same parasites which I found on the young Finback I cannot say. There was also a line of small round blisters & the dermis beneath was similar to that in the large scars.

N.B. July 2nd Further examination convinces me that most, at least, of the spots were caused by that parasite

### Ribs

There were 14 pairs of ribs - the last pair did not seem to be "floating" as the tubercle had apparently been attached. I watched both sides when the ribs were cut apart.

Flukes Below have wide ant. & post. margins of dark gray + the rest is shell-pink - not white - above slate.

Measurements No 23

|    |                              |        |
|----|------------------------------|--------|
| 1  | Total length                 | = 1465 |
| 3  | Snout to eye                 | = 274  |
| 4  | " " blowhole                 | = 265  |
| 6  | " " post. inst. fin          | = 475  |
| 8  | Eye to ear                   | = 65   |
| 9  | " above "                    | = 7    |
| 10 | " opening                    | = 8    |
| 11 | Ear "                        | = 8    |
| 12 | Flukes to anus               | = 420  |
| 15 | " " navel                    | = 710  |
| 16 | " " post. inst. dorsal       | = 400  |
| 17 | " " " " pectoral             | = 990  |
| 18 | Fins tip to humerus          | = 189  |
| 19 | " " " post. inst.            | = 120  |
| 20 | " " " ant. "                 | = 159  |
| 21 | " breadth                    | = 451  |
| 40 | Length baleen row            | = 275  |
| 41 | Longest plate                | = 55   |
| 43 | Lower jaw beyond upper       | = 20   |
| 44 | Number throat furrows        | = 50   |
|    | Length white part. of baleen | = 65   |

6.45 P. M.


no 24/

Sei whale ♂ June 11/10 Aikawa

A very light  
whale

The right side of the rostrum & top of head, <sup>dark</sup> blue gray, darker than the peduncle a good deal. Back also dark blue gray. The general effect of color given by this whale is much like a Blue whale - very light color but more bluish on the whole & bluish.

Sides of Right lower lip & ramus all light blue gray, the edge of the lip being a trifle darker. (I did not see the left ramus) The central portion of throat & breast white, the furrows being pinkish. Under the corner of the mouth on the right side there are 14 furrows which are dark gray or slate. An ~~irregular~~ <sup>with irregular lower margins</sup> blotch of gray <sup>on the folds</sup> from the corner of mouth under fin & to a point nearly opposite the tip of fin laid back, where it broadens out <sup>abruptly</sup> into a wide band which runs across belly joining the gray of the folds on the other side. This "belly band" <sup>on the folds</sup> is dark blue gray & darker than the sides immediately behind & above it. ~~From the navel to across the ventral line is bluish white.~~ The sides of the peduncle are beautiful light blue-gray, becoming lighter

~~the~~ <sup>toward</sup> the ventral line. Between the navel & anus this runs into bluish white, but behind the anus the ventral line is <sup>light</sup> blue gray, and does not become white. The sides of the peduncle are beautifully marked with light lines which radiate from a common center, like this,  the central axes being directed ~~at~~ various ~~and~~ angles & the lines running into & joining each other. It is a very difficult pattern to describe. There are also many oblong white ~~spots~~ <sup>scars</sup> which seem to have been caused by a parasite's cirripes. I saw one "pit" which contained a granular membrane like that in similar pits on Blue & Finback whales.

### Flukes

Below same color as sides of peduncle except for an ant. & post. & tip margin of dark gray. The flukes are "lined" in same manner as those of the Blue whales, the lines running across in a curve inward from ant. almost to post edge - above slate.

Each lobe of the flukes is nearly triangular. The posterior edge is ~~straight~~ <sup>convexity</sup> straight except for a very shallow ~~convexity~~ at tip. The anterior margin is straight with just shade of ~~convexity~~ <sup>convexity</sup>.



A

near ~~the~~ the insertion. The anterior edge joins the peduncle abruptly, and does not present that gradual slope so characteristic of the Humpback. The axis of the lobe makes an angle of about 40 degrees with the axis of the peduncle - it is nearly a right angle.

Pectorals

Below anterior half for whole length very light <sup>blue</sup> gray - posterior half gray. The fine "lining" is very distinct on this whale. The lines come down from tip along post. edge ~~to the~~ sweep across fin. near base the lines curve from post. to ant. edge the convexity of the curve being up. Above all gray.

Baleen

Bristles white - the posterior half has the tips grayish and the extreme proximal ~~portion~~ matting gray. The plates have the same white & gray stripes along inner basal edge & the same incidence that I spoke of before.

Riles

14 prs (sure)

Navel

Navel is about 18 inches behind the end of the longest furrow and is not at the end of the furrows as in Blue & Finback whales.

But

Edges of snout below pink for 30 cent each side. Both lower lips ~~to~~ inside have upper halves dark gray & lower halves gray peppered with dark gray.

## Measurements Sei whale # 24

|    |                              |       |
|----|------------------------------|-------|
| 1  | Total length                 | 1450  |
| 2  | Snout to eye                 | = 275 |
| 5  | " " blowhole                 | = 225 |
| 6  | " " post. inst. pectoral     | = 505 |
| 8  | Eye to ear                   | = 77  |
| 9  | " above "                    | = 9   |
| 10 | " opening                    | = 8   |
| 11 | Ear "                        | = 1.5 |
| 12 | Notch flukes to anus         | = 365 |
| 15 | " " " navel                  | = 630 |
| 16 | " " " post. inst. dorsal     | = 430 |
| 17 | " " " " " pectoral           | = 950 |
| 18 | Pectoral tip to head humerus | = 200 |
| 19 | " " " post. inst.            | = 130 |
| 20 | " " " ant. "                 | = 164 |
| 21 | " breadth                    | = 40  |
| 22 | Dorsal height                | = 53  |
| 23 | " ant. post. length          | = 60  |
| 23 | Flukes tip to tip            | = 340 |
| 24 | " breadth                    | = 97  |
| 26 | " right lobe axially         | = 190 |
| 37 | Anus to navel                | = 265 |
| 40 | Length baleen row            | = 280 |
| 41 | Longest plate                | = 70  |
| 43 | Lower jaw beyond upper       | = 17  |
| 44 | Number throat furrows        | = 32  |

6.15 a.m. ~~Shetland~~ ~~Box~~

No 25-

Humpback ♂ June 12/10 Aikawa

This whale was very "thick" & stout. The blubber was very ~~fat~~ thick.


Head, sides & back, black - the sides & back marked with a very few small white flecks. Right lower lip thickly marked with circles & semi-circles of white - The ~~rest~~ throat, breast & belly to the ends of folds, white, thickly & marked with black in flecks & dashes <sup>of the latter</sup> ~~which are~~ usually directed obliquely down & back. On the right side of the throat just under ramus the black & white is ~~about~~ about equal in quantity. A black band, thickly dashed with white runs obliquely backward from <sup>root of</sup> height of fin meeting the mid-ventral line a similar band from left side, thus forming a rough V. The apex of the V is opposite a point about  $\frac{1}{3}$  the length of the fin when laid back. A few white spots & streaks between fin & eye. ~~Just~~ <sup>Just</sup> forward of penis sheath is a wide semi-circular band of white, & from this forward to navel a narrow black ventral line. About the "hump" on the ventral line is much white & many circles. The left ramus & lip are black marked with only a few circles of white.

The tip of the snout is white below on both sides - The tongue is blue slate - The mucous membrane in the roof of the mouth is white tinged with purplish

### Flukes

Below white with a narrow ant. port. band of black along the ridge of the peduncle almost to notch - <sup>the ant. edge along at the tip.</sup> The port. edge is also margined with black. Above black with some white circles. Port. margins of flukes scalloped, but not deeply

### Dorsal

Has usual humpback shape  & has both the entire ant. <sup>port.</sup> edge & the tip edge with white

### Fins.

Above black with many white circles along <sup>entire</sup> port. edge - a cluster of circles near the port. insertion & another cluster ~~near~~ <sup>at</sup> the port. edge near the tip - anterior edge white, with some black at ~~each~~ 6. of the 8 tubercles. Below pure white except for a small black blotch at base & a little black at the tip.

### Baleen

When looked at from front to back ~~bristles~~ bristles show dark brown-gray with a narrow dirty light gray band in the center of the row for ~~half~~ to the anterior half. The post. half has all bristles dark brown-gray

## Measurements of Humpback No 25 ♂

|    |   |                       |
|----|---|-----------------------|
|    | Total length straight notch to tip <u>under</u> jaw               | = 46'7"               |
| 1  | " " overback " " " snout  | = 1375 <sup>cm.</sup> |
| 3  | Snout to eye  | = 330                 |
| 5  | " " blowhole  | = 255                 |
| 8  | Eye to ear  | = 58                  |
| 9  | " above "   | = 18                  |
| 10 | " opening   | = 8                   |
| 11 | Ear "   | = 1                   |
| 12 | notch flukes to anus  | = 320                 |
| 13 | " " " penis center  | = 465                 |
| 15 | " " " navel   | = 605                 |
| 16 | " " " post. int. dorsal   | = 435                 |
| 17 | " " " " pectoral  | = 240                 |
| 18 | Pectoral tip to head humerus                                      | = 407                 |
| 19 | " " " post. int.  | = 330                 |
| 22 | Height dorsal   | = 18                  |
| 23 | Flukes tip to tip   | = 485                 |
| 24 | Greatest breadth flukes ant.-post.                                | = 115                 |
| 29 | Depth peduncle at ant. inst. of flukes                            | = 100                 |
| 30 | " " between flukes & anus (at lower hump)                         | = 150                 |
| 36 | Anus to <sup>center</sup> tip of penis                            | = 145                 |
| 40 | Length baleen row   | = 310                 |
| 41 | " " longest plate   | = 74                  |
| 44 | Number throat furrows   | = 23                  |
|    | Tip of baleen 120 apart at widest point as they stand in position |                       |

not

no 26

Sii whale ♂ June 12/10 Aikawa

A light whale - sides of peduncle a beautiful light blue gray marked as I have described in no. 24. The band running across belly is not strongly marked in this whale. Between penis & navel the mid-ventral line is white.

Upper half of lips blue-gray - lower half light gray flecked with dark gray.

Flukes below lined as are those of a Blue whale. Dorsal dark gray.

Bristles of baleen all white, very fine & thick - they have not the usual gray tips. The bristles of both's & no 24 are thicker than on any whale I have ever seen.

Pink edging of snout below for 40 cent. on each side. Tips of baleen rows are positioned 115 cent. apart at their widest.

13 prs. of ribs.

Total length

= 1380

Snout to eye

= 265

" " blowhole

= 200

" " post. inst. fin

= 470

Eye to ear

= 74

" above "

= 6

" opening

= 7

Ear "

= 3

|                                    |       |
|------------------------------------|-------|
| Notch of fluke to anus             | = 360 |
| " " " " post. int. dorsal          | = 420 |
| " " " " " pectoral                 | = 890 |
| Height of dorsal                   | = 52  |
| Length right lobe of fluke axially | = 175 |
| Anus to navel                      | = 270 |
| Length baleen row                  | = 270 |
| " " longest plate                  | = 751 |



no 27 - Tursio borealis (Peale) and Lagenorhynchus obliquidens Gill  
June 12/10 Akawa Japan

On the evening of June 13<sup>th</sup> 1910 the "Akelona  
Mam" Capt. Skontorp brought in five  
porpoises - 2 specimens of Lagenorhynchus  
obliquidens Gill, <sup>one ♂ & one ♀</sup> and three adult  
examples of Tursio borealis (Peale), <sup>2 ♂ and one ♀</sup>  
The specimens had been killed for  
~~the~~ <sup>the</sup> day previous and were not described  
by me until the morning of the 14<sup>th</sup>.  
Decomposition had of course set in  
to a certain extent and ~~the~~ all the  
animals were more or less swelled  
~~as a~~ by the resulting gasses. Therefore  
~~the~~ <sup>the</sup> girth measurements <sup>of the area between</sup>  
~~the girths & pectoral fins~~ <sup>the girths & pectoral fins</sup> ~~were not taken~~ <sup>were only approximate</sup>  
the actual circumferences in life: the  
two girth measurements taken antea-  
rior to the pectorals <sup>& at the axilla</sup> ~~were~~ <sup>were</sup>  
~~affected~~ but slightly by decomposition.  
The specimens were placed side by  
side in a convenient shed and I  
~~did~~ <sup>had</sup> examined them at my leisure  
thus having an exceptional opportunity  
for direct comparison, & being able to  
note individual & sex differences. They  
~~were also~~ Both species were also compared  
with Scammon's figures published in  
Travis "Delphinidae" a copy of which I  
fortunately had with me at the time.

ms 27 Urolophus borealis (Peale) June 12/10 Aikawa Japan

~~70047~~ This specimen was <sup>offspring</sup> adult, the teeth however being unworn

Color Below; The extreme tip of the mandible is black for 19 mil. There is then a portion immediately succeeding is bluish white for ~~except~~ a distance of 70 mil. except the extreme <sup>upper</sup> edges of the ~~mandible~~ lip which have a narrow edging of black. Behind this is a funnel shaped area of slate color the "snout" of the funnel being 135 mil long ~~and~~ occupying the ventral area of the mandible; The sides of the mandible above this are black. The greatest width of the funnel shaped slate area is 180 mil. A narrow white line runs down the exact center of the throat thru the slate area & the anterior end of the line spreading out & shading off gradually into slate. The posterior end of this median white line ~~spreads~~ widens gradually until it is 30 mil wide, when <sup>420 mil behind tip of snout</sup> it suddenly ~~branches~~ broadens out each arm ~~running~~ obliquely backward & upward to the anterior insertion of the ~~pectoral~~ <sup>enveloping</sup> pectoral fins. It runs obliquely up & back on the under base of the fin ending in a point. ~~From the~~ The white begins again at the extreme base of the fin & runs straight back for a distance of 110 mil, then curves rather abruptly ~~down~~ down & back

toward the ventral line, it then runs back along the mid ventral line of the body in a band of varying width. At its narrowest point, between the ~~flukes~~ fins & the navel this band is 38 mil wide.

It widens slightly <sup>at</sup> ~~over~~ the penis slit, curves in a bit between the penis & anus, <sup>widens again at the anus</sup> & then runs backward regularly ~~to~~ to the flukes along the mid ventral edge ~~that~~ the peduncle ~~where it~~ <sup>and</sup> is lost 20 mil from the notch of the flukes at the same point that the "keel" on the under surface of the flukes is lost. The edges of the white area are sharply defined, but from the fins back ~~to~~ <sup>along</sup> the edges for several cent. the ~~dark~~ color is ~~a~~ slate shading imperceptibly into the black.



I am convinced that if the animal were examined immediately after death that this slate shading along the edges of the white would be considerably more distinct than they are at present. Above; Entirely ~~red~~ ~~black~~ black,

except for the upper edge of the peduncle for a distance of 25 mil from the end of the ridge on the flukes which is distinctly slate color shading into the black. Also the edge of the upper tip on each side for a dist of <sup>40</sup> mil is whitish. I believe that if examined when fresh the color of the upper parts would be found to be dark slate and not black.

Flukes

Above black inclined to slate -  
Below ~~the~~ <sup>ant. port.</sup> a narrow band of dark slate runs across flukes along side of median keel - The posterior edge has a margin of <sup>dark</sup> slate, widest at notch, here joining the ant. port. bands. Rest of flukes below are white.

Peduncles

Above black, below black except for the narrow point of white which runs up on the base from the white of the breast.

Color Variation no 28 ♂

no. 28 ♂ has the white <sup>patch</sup> near the tip of the under jaw not so long. There is no white edging to the upper jaw on the left side & just a suggestion of it on the right.

The white ventral band between pinnas & pinnas is much narrower than in no 27 & the slate along the edges here is more distinct. The

flukes below <sup>have</sup> ~~had~~ a little wider dark slate <sup>ant. part.</sup> band along the median keel. The flukes above are of a lighter slate than no. 27

no 29 ♀

The fine white line in the throat is short <sup>even</sup> + flat anteriorly. The throat slate area is indistinct - The whitish edging to the upper lip is obsolete - The white mid ventral band between fins. + vulva is much broader than in the other two. The flukes below have the <sup>extreme</sup> tips dark slate. Flukes above lighter slate than no 27 - same color as no 28

Variation in Body form

no 28 ♂ is a very slender and does not appear to be greatly distended by gas. It is strikingly different from no. 29 ♀ in body outline, which is a decidedly <sup>negotiable</sup> ~~thicker~~ thicker whale. No 27 ♂ is intermediate between 28 ♂ + 29 ♀

The outline of the body of 28 ♂ seems to be fairly typical & ~~will~~ may be described as follows. From the short snout the ~~head~~ outline of the head slants back <sup>up</sup> gradually to a point opposite a little anterior to the corner of the mouth where it flattens. It dips slightly

at the blowhole, then ~~slopes~~ gradually making the outline of the back between the fins & pectorals convex. The upper edge of the peduncle a little behind anus is fairly straight. Below the edge of the peduncle from pectorals to anus is fairly straight, from that point gradually swelling outward to form belly. The belly & breast line <sup>is</sup> ~~is~~ <sup>irregularly</sup> ~~irregularly~~ sweep on to throat.

#### Variations in Head shape

Unswollen the side

1 The ~~upper~~ <sup>upper</sup> ~~superior~~ slant from the mouth is a little longer in no 27 ♂ than in no 28 ♂ - on the former the head flattens off on the corner of the mouth. On 28 ♂ the flattened area begins a little anterior to this. That is the "forehead" is higher in 28 ♂ <sup>& the slope more abrupt</sup>. On 29 ♀ the head outline is decidedly different. ~~The slant is more gradual but altho' it is no longer, the~~

The portion of the body anterior to the fins is decidedly more depressed giving the head a much sharper appearance. The forehead is ~~much~~ lower. This sharpness to the anterior portion of the body is accentuated by the fact that the body behind the fins is much thicker than in the others. This is <sup>perhaps</sup> ~~probably~~ a sexual difference



Measurements do not bring out these differences in head shape because the ♀ is much thicker in proportion to the length than the ♂'s and consequently girih measurements are squelged

since the two males do not show it

~~But~~ I viewed from above the same differences appears in #29 ♀ The head is much ~~narrower~~ more compressed & is sharper

### Osteology

When removing the skeleton I dissected the animals with great care & the following results are certainly correct

No 29 ♀

I. bonalis No 29 ♀

Tooth formula  $\frac{47-46}{47-46}$  Teeth set loosely in sockets & could be easily

moved with the fingers; teeth curved slightly outward, & very sharp. The anterior ones of each jaw are exceedingly small & if they had not been counted in situ the formula would almost certainly be given as different because the very minute anterior ones would surely be lost by ordinary preparateurs. This would undoubtedly account for the discrepancies in the formulae given by True for this species.

Ribs 97 prs - the last 2 prs short + immatatched c. c. "floating" Five prs. of ribs articulate to the sternum & two prs. to the cartilage on its extreme lower end.

31 lumbar vertebrae.

15 dorsals if not counting the ones opposite the two floating ribs. & 20 the lumbar



would be two less + the dorsals two more

no 27 ♂

L. borealis no. 27 ♂

42-44 ~~first~~ two teeth in mandible very  
45-45 small. 17 prs of ribs - the last 2  
prs floating.

30 lumbar vertebrae.

The first three chevrons are extremely small, the 4<sup>th</sup> increases in length abruptly, the 5<sup>th</sup> & 6<sup>th</sup> decrease regularly & the 7<sup>th</sup> & 8<sup>th</sup> are about of equal length. The 9<sup>th</sup> is slightly longer than the 8<sup>th</sup> & is the longest of the series & the remaining ones decrease gradually in height.

cl no. 29 ♀ there were only two minute chevrons at the beginning of the series, thus increasing the lumbar units. cl am positive that the name of the small chevrons could have been overlooked.

no 28 ♂

L. borealis no 28 ♂

43-44 The tips of the mandible & rostrum  
45--? are broken

There are 30 lumbar - three minute first chevrons.

no 31 ♀

L. obliquidens no 31 ♀

13 prs of ribs - 5 articulate to sternum  
22 lumbar

no floating ribs.

4 small anterior chevrons - the 8<sup>th</sup> is highest of series.

29-30 teeth 2 ant. teeth very small  
29-29 above & below.

no 30 ♂

S. obliquens no 30 ♂

13 pairs of ribs:

29-28

28-27

Undoubtedly the variation in the dental formula for all members of the Delphinidae is largely due to the presence or absence of the minute anterior & posterior teeth in both jaws. In most species these teeth are exceedingly minute and in some specimens not present at all. In the majority of museum specimens they would be lost.

5 small anterior chevrons the 6<sup>th</sup> increasing abruptly in size - the 10<sup>th</sup> is the highest of the series

21 lumbar

|   |    |    |    |
|---|----|----|----|
| C | D  | L  | Ca |
| 7 | 13 | 21 |    |

no 28  
(cont)no 28 ♂ (cont) This was taken while phalanges are in situ.

Phalanges (right pectoral) I II III IV V taking as first digit the small one outside on radius.  
 The terminal phalanges 1 7 6 3 2  
 of digits II & IV are circular - that of digit V is exceedingly minute. That of digit III is also very small. There are 6 carpalia - 3 proximal row & 3 distal row.

|   |   |
|---|---|
| ♂   |   |
| No 27   | <i>Pursio borealis</i> (Peale) June 12 1910 Aikawa mil. |
| Length straight snout to notch                                      | = 215   |
| " over back " " "   | = 2180  |
| Circum. of body opposite tip of <sup>greatest</sup> first land back | = 9510  |
| Snout to eye  | = 330   |
| " " blowhole (center)   | = 340   |
| " " corner of mouth   | = 230   |
| " " post. int. fin (pectoral)                                       | = 690   |
| Tip lower jaw to corner of mouth                                    | = 238   |
| Eye opening   | = 23  |
| Notch of flukes to anus   | = 530   |
| " " " " penis   | = 693   |
| " " " " navel   | = 875   |
| " " " " post angle pectoral   | = 1415  |
| Pectoral tip to post angle  | = 215   |
| " " " ant. "  | = 270   |
| " " greatest breadth (at angle)                                     | = 90  |
| * " post edge from base to angle                                    | = 75  |
| " " " " angle " tip   | = 130   |
| " width at base   | = 1055  |
| Flukes tip to tip   | = 350   |
| " greatest breadth ant-post   | = 137   |
| Depth notch   | = 20  |
| Length right lobe axially   | = 200   |
| " left " " "  | = 220   |
| Depth peduncle at ant. int. flukes                                  | = 83  |
| " " between flukes & anus   | = 116   |
| Distance tips of blowhole   | = 29  |
| Length blowhole curved  | = 42  |
| Length anal opening   | = 35  |
| T " penis slit  | = 130   |

Dist. between ant. & 1st. fins below = 315  
 " " post. " " " = 345  
 Lower jaw beyond upper = 9  
 Height of eye above line of mouth to center of eye = 15  
 Length of beak = 53  
 " V of " = 145  
 Girth head at eyes = 650  
 " body " anus = 412  
 " " in front of fins = 835  
 Breadth of snout at base of V - over nose = 76  
 Dist. from corner to corner of mouth over head = 275  
 Stomach contained many small fish  
 bones

measurements

No 28 Pursio borealis (Peale) ♂ June 12 / 10 Aikawa <sup>mile.</sup>  
 Length straight snout to notch = 1975  
 " over back " = 2045  
 \ Cir. of body opposite fins laid back = 885  
 Snout to eye = 305  
 " " corner of mouth = 204  
 " " blowhole (center) = 303  
 " " post. base pectoral = 617  
 Length eye ~~after~~ ~~post~~ ~~down~~ = 22  
 Notch flukes to anus = 612  
 " " " penis = 650  
 " " " navel = 875  
 " " " front. 1st. pectoral = 1410  
 Pectoral tip to post. 1st. = 197  
 " " " ant. 1st. = 253  
 " " greatest breadth (at angle) = 83

Stomach contained many fish bones - the vertebrae would seem to indicate sardines.

|   |        |
|---|--------|
| Length post. edge pectoral from base to angle           | = 60   |
| " " " " " angle " tip                                   | = 128  |
| width " " at base                                       | = 105  |
| Length of beak  | = 50   |
| Height eye above line of mouth                          | = 10   |
| Length V of beak (approximately)                        | = 100  |
| Girth head at eyes                                      | = 63.5 |
| " body " across   | = 400  |
| " " in front of fins                                    | = 790  |
| Dist. from corner to corner of mouth over head          | = 260  |
| Breadth snout at base of V (over nose)                  | = 75   |
| Tip under jaw to corner of mouth                        | = 212  |
| Flukes tip to tip                                       | = 380  |
| Greatest breadth flukes and post.                       | = 125  |
| Depth notch of flukes                                   | = 23   |
| Length right lobe axially                               | = 127  |
| " left " "  | = 210  |
| Depth peduncle at ant. inst. of flukes                  | = 89   |
| " " between ant. " " " & anus                           | = 125  |
| Length across tips of blowhole                          | = 32   |
| " curved " "  | = 40   |
| " anal opening  | = 32   |
| " penis slit  | = 125  |
| " navel "   | = 15   |
| Dist. between ant. inst. of fins below                  | = 288  |
| " " post. " " " "                                       | = 330  |
| Tip lower jaw to beginning of white branching on throat | = 393  |
| Width of white band at branching behind fins            | = 8    |
| " " " " " narrowest between first navel                 | = 15   |
| Length of whitish patch on tip of lower jaw             | = 155  |

## measurements

no 29

*Uriso borealis* ♀ June 12 / 10 Arkawa Japan

|   |         |
|---|---------|
| Length straight notch to flukes             | = 2110  |
| " " " over back                             | = 2175  |
| Cir. of body opposite tip of fins laid back | = 1040  |
| Snout to eye                                | = 3518  |
| " " corner of mouth                         | = 2581  |
| " " blowhole (center)                       | = 368   |
| " " post. inst. of pectoral                 | = 7251  |
| Tip lower jaw to corner of mouth            | = 268   |
| Length eye opening                          | = 22    |
| Notch flukes to anus                        | = 5451  |
| " " clitoris                                | = 625   |
| " " mammary slit                            | = 600   |
| " " post. inst. pectoral                    | = 14810 |
| Pectoral tip to post. inst.                 | = 212   |
| " " ant. "                                  | = 280   |
| " length base to angle post edge            | = 751   |
| " " angle " tip " "                         | = 140   |
| " width at angle                            | = 90    |
| " " " base                                  | = 1151  |
| Length of beak                              | = 751   |
| Girth head at eyes                          | = 680   |
| " body " anus                               | = 420   |
| " " in front of fins                        | = 890   |
| Corner to corner of mouth over head         | = 2651  |
| Breadth of snout at base of V (over curve)  | = 63    |
| Length Flukes tip to tip                    | = 402   |
| " greatest breadth ant-post                 | = 148   |
| " Depth notch                               | = 29    |
| Length right lobe axially                   | = 238   |
| " left " " "                                | = 2251  |

|   |       |
|---|-------|
| Depth peduncle at flukes incl.                    | = 90  |
| " " between " & anus                              | = 135 |
| Dist. between tips of blowhole                    | = 351 |
| Length blowhole curved                            | = 41  |
| " anal opening                                    | = 10  |
| " mammary "                                       | = 19  |
| Dist. between " " 5                               | = 37  |
| Length genital slit                               | = 152 |
| Dist. between post. inst. fins below              | = 410 |
| " " ant " " "                                     | = 341 |
| Lower jaw beyond upper                            | = 151 |
| " " to beginning of white <sup>band</sup> on chin | = 440 |
| Width of white band at branching behind fins      | = 100 |
| " " " " narrow + between " & next 52              |       |
| Length white patch on tip of lower jaw            | = 96  |

## Measurements

No 30

|   |         |
|---|---------|
| <u>L. obliquidens</u> ♂ June 12 / 10 Aitawa |         |
| Length straight notch to flukes             | = 17501 |
| " over back " " "                           | = 1870  |
| Snout to eye                                | = 280   |
| " " corner of mouth                         | = 330   |
| " " blowhole (center)                       | = 300   |
| " " post. inst. pectoral                    | = 5184  |
| " " base of dorsal (posterior)              | = 10151 |
| Eye to ear (center)                         | = 70    |
| " above "                                   | = 9     |
| " opening                                   | = 23    |
| Ear "                                       | = 1     |
| Notch flukes to anus                        | = 4881  |
| " " " peris                                 | = 6881  |
| " " " post. inst. of dorsal                 | = 8510  |



|   |         |
|---|---------|
| Pectoral tip to post. nostril                             | = 240   |
| " " ant.  | = 320   |
| " greatest breadth  | = 105   |
| " " at base   | = 125   |
| nostril to post. nostril, pectoral                        | = 125.0 |
| nostril flukes to navel                                   | = 933   |
| Height dorsal (vertical)                                  | = 180   |
| Flukes tip to tip   | = 445   |
| " greatest breadth (ant. part)                            | = 160   |
| " depth notch   | = 30    |
| " length right lobe axially                               | = 265   |
| " " left " "  | = 265   |
| Depth peduncle at ant. & post. flukes                     | = 195   |
| " " between " " & anus                                    | = 185   |
| Length blowhole across tips                               | = 32    |
| " " curved  | = 48    |
| Dist. between ant. nostril of fin below                   | = 220   |
| " " post. " " "   | = 265   |
| Lower jaw beyond upper                                    | = 5     |
| Length base of dorsal                                     | = 25.0  |
| " V left side of beak (approx.)                           | = 100   |
| Corner of mouth to ant. nostril fin                       | = 240   |
| " " " center of eye                                       | = 50    |
| Girth of head at eyes                                     | = 670   |
| " " body in front of fin                                  | = 925   |
| " " " at anus   | = 565   |
| Dist. from corner to corner of mouth <sup>over head</sup> | = 360   |
| Height eye above line of mouth                            | = 25    |

A scar on side half way above right fin - also one on lower lip in front of & under corner of mouth. Possibly a little more dark gray along anterior edge of dorsal than in No. 18 - otherwise the same so far as coloration, etc. is concerned. The blowhole is drawn forward & downward to open it - No hair to be seen. Stomach empty.

no. 31 ♀ *S. obliquidens* ♀ June 12/10 Aikawa Japan

Length straight = 1760  
 " over back = 1880  
 Snout to eye = 275  
 " " corner of mouth = 230  
 " " blowhole (center) = 295  
 " " post. inst. pectoral = 545  
 " " " dorsal = 1092  
 Eye to ear (center) = 64  
 " above " = 8  
 " opening = 20  
 Ear " = 7  
 Notch flukes to anus = 533  
 " " " clitoris = 598  
 " " " mammaries = 580  
 " " " navel (Suck) = 960  
 " " " post. inst. dorsal = 520  
 " " " " pectoral = 1283  
 Pectoral tip to post. inst. = 243  
 " " ant. " = 315  
 " greatest breadth (angle) = 100  
 " base " = 110  
 Height dorsal vertical = 180  
 Length of " base = 2510  
 Flukes tip to tip = 440  
 " greatest breadth ant-post = 163  
 " depth notch = 33  
 " length right lobe axially = 260  
 " " left " = 265  
 Dist. to pinnule at ant. inst. of flukes = 105  
 " between " " " & anus = 195  
 Length blowhole across tips = 26  
 " " curved = 42  
 Dist. apart of fins anteriorly below = 195  
 " " " " posteriorly " = 245  
 Length anal opening = 13  
 " mammary " = 20  
 Dist. between " " 3 = 45  
 Lower jaw beyond upper = 7  
 Corner of mouth to ant. inst. pectoral = 230  
 " " " " center of eye = 510  
 Girth of head at eyes = 695  
 " " body in front of fins = 875  
 " " " at anus = 560  
 Dist. from corner to corner of mouth over head = 390  
 Height of eye above line of mouth = 25

On this specimen the beak is a little less distinct & the line of the head is straight from the snout ~~back~~ to the head. That is, there is no "lip" in the outline of the rostrum at the beak. Many small fish bones in stomach.

no. 32

Phocaena n. sp.? June 18/10 Ribauwa

This porpoise was not seen by me until the 22<sup>nd</sup> having been killed four days. The station master had the entrails removed, by cutting down the median line of the belly. The ~~remainder~~<sup>rest</sup> of the specimen remained intact until my return, when I photographed, measured & described it. I have compared the specimen point by point with Torre's figure of Phocaena dalli published in his "Delphinidae" and find the following differences

1. The white area on the sides of P. dalli begins anteriorly about opposite the anterior edge of the dorsal fin. In this specimen the white side area extends forward to a point slightly ~~anterior~~<sup>beyond</sup> the <sup>anterior</sup> insertion of the pectoral fins.
2. In P. dalli the upper edge of the white area is almost on a line from the corner of the mouth to the flukes. In this specimen, the upper edge of the white area is considerably above such a line.
3. In our specimen<sup>n</sup> the lower edge of the peduncle, just anterior to the flukes inserted there is a patch of gray marked with short horizontal black lines. This

patch is distinct. P. dalli presents no such coloration.

4. The outline of the posterior half of the body of our specimen is totally unlike that of P. dalli, & in fact is unlike that of any other porpoise with which I am familiar.

The upper & lower edges of the peduncle are not ~~particularly~~ "flange like" as in P. dalli. The edges are sharp above but not below. They ~~are~~ <sup>thin</sup> gradually to the upper edge.

The body is apparently thicker than in P. dalli.

#### Description

Color <sup>entire</sup> Head, back & upper sides black. A white area occupies the lower sides, ~~posterior breast except with ventral fin~~ ~~ventral fin~~ & belly. This white area extends forward to a point slightly beyond the anterior insertion of the pectoral fins. In the central part of the body the superior edge of the white area is almost straight; anteriorly the end is rounded, the lower ~~anterior~~ <sup>not reaching</sup> edge extending back & down <sup>the base of the fins</sup> obliquely running on to the breast ~~along~~ a little behind the posterior insertion of the fins. ~~Posteriorly~~, Between the fins the black of the throat extends backward in a ~~the~~ narrow band on the mid-

ventral line of the heart, ~~to a~~ <sup>to a</sup> ~~pro~~ ending  
2.0 mm behind the post. int. of fin.  
The rest of the ~~belly~~ <sup>heart</sup> ~~is~~ <sup>heart & belly</sup> white.  
Posteriorly the white side area ends in a  
falcate-shaped band on either side, the  
black of the peduncle encroaching  
on the mid ventral line running for-  
ward <sup>of</sup> ~~half~~ <sup>way</sup> ~~between anus & pectoris.~~  
The lower half of the <sup>sides of the</sup> peduncle <sup>& small line</sup> ~~is~~  
~~a space~~ just in front of the flukes  
insertion is occupied by a grayish  
patch thickly marked by short, parallel  
black lines. On the ventral edge of  
the peduncle this area is 200 mm.  
long

Flukes

The anterior ~~to~~ edge of each lobe is  
slightly convex; considerably so at tip.  
The post. edge is ~~slightly~~ very slightly  
concave. The tips are not sharp. The  
notch is deep & open.

The flukes below are black except  
for a whitish band which runs from  
~~the~~ each side of the notch along the  
~~post edge~~ obliquely across ~~the~~ each  
lobe ~~to the~~ meeting the anterior  
edges 50 mm from the tip.

Below colored the same.

Fins

Black above & below except for a small  
area of grayish, faintly marked at the angle

on the post. edge. Ant. edge of fin strongly convex; post. edge concave, but the angle is rounded & not sharp.

Dorsal

~~triangular~~ ~~tip~~ ~~which is slightly recurved.~~  
Dorsal ~~very lightly~~ ~~of~~ ~~all~~ ~~black~~. Upper half whitish marked with a few scattering short black, parallel lines. Entire post edge dark. 14 small tubercles along ant. tip of fin. The dorsal is thin.

Peduncle

The outline of the peduncle presents the most remarkable character about this species. From the dorsal fin to a point 300 mil. anterior to flukes insertion the upper edge is almost parallel with the axis of the body; at that point, it drops ~~abruptly~~ <sup>more abruptly</sup> ~~down~~ to the flukes. This upper edge is thin & sharp.

The lower edge of the peduncle presents a prominent rounded "bulge", which begins immediately behind anus & ending 220 mil. ant. to flukes insertion.

This peculiar shape to the peduncle gives the animal a "chunky" appearance.

The lower jaw projects slightly beyond upper & is blunt. The head is blunt <sup>& sharp</sup> tapering rapidly from the eyes to the snout. ~~obtusely to~~



# Osteology of *Phoxenus* no 32

I dissected the specimen with extreme care & there is no possibility that the following results are not absolutely correct.

There are 17 prs. of ribs - the next to the last rib on each side is long but is attached to the transverse process of the vertebrae. The last pair of ribs are short & "floating" & might easily be overlooked. ~~of~~ There are twenty-six lumbar vertebrae if the vertebra opposite to the pair of floating ribs is counted as a lumbar. ~~if~~ if it is counted as a dorsal, the number of lumbar will be twenty-five.

|   |          |          |    |    |
|---|----------|----------|----|----|
| C | D        | ♀        | ♂  | Ca |
| 7 | 16 or 17 | 26 or 25 | 46 | 95 |

~~There are~~ There are 35 chevrons in the entire series. The two or three small chevrons at the beginning of the series commonly present in porpoises are absent in this specimen. The first chevron is long but free distally. The laminae of the 2nd are very broad & the spine is pointed distally. It is slightly longer than the first.

The 3rd is of about the same width as the first but is longer than the 2nd. The ~~4th~~ 4th & 5th are very narrow



and are somewhat longer than the 3<sup>rd</sup>. The 6<sup>th</sup> is slightly wider & longer than the 5<sup>th</sup>. The 7<sup>th</sup> is longer & broader than the 6<sup>th</sup> & the 8<sup>th</sup> is the longest of the series. From this back they decrease gradually in length & increase very gradually in breadth. These observations are of the chevrons in situ - whether or not the actual measured length would correspond with this or not I can't tell until they are cleaned. The 8<sup>th</sup> is however the highest or longest as the series stand in position. The anterior ~~base~~<sup>chevrons</sup> of the series are directed backward & permit of considerable antero-posterior movement.

The 2nd & 15th chevrans are about equal in height as they stand in position. ~~but~~

The last chevron is exceedingly minute, but it ossified - 1

The last two candles very small all both very small

↑ each

19-19 Posterior teeth in both jaws  
22-22 exceedingly minute & not  
show above the gum, altho' the alveoli  
are distinct pits in which the teeth may  
be found. ~~They are not~~

Measurements of *Phoca* no 32

|   |                        |      |
|---|------------------------|------|
| Total length straight from snout to notch                               | = 1915                 | mil. |
| " " over back (over the curve of peduncle)                              | = 2115                 |      |
| Snout to eye  | = 233                  |      |
| " " corner of mouth   | = 1251                 |      |
| " " blowhole (center)   | = 2500                 |      |
| " " part. <sup>insertion</sup> <del>coast</del> pectoral                | = 4151                 |      |
| " " " " dorsal  | = 1110                 |      |
| Tip lower jaw to eye  | = 283                  |      |
| " " " " ant. edge blowhole  | = 260                  |      |
| " " " " corner of mouth   | = 134                  |      |
| " " " " ant. base pectoral  | = 3051                 |      |
| Eye to blowhole vertical  | = 168                  |      |
| Tip lower jaw to ant. boundary white area on side                       | = 310                  |      |
| Blowhole to ant. edge base of dorsal                                    | = 5051                 |      |
| Tip lower jaw to penis  | = 12351                |      |
| Length white area along mid ventral line                                | = 7351                 |      |
| Depth body 24 inches anterior to flukes <sup>(over curve of body)</sup> | = <del>1470</del> 5135 |      |
| " " " " " "   | = 270                  |      |
| ✓ Length eye opening  | = 22                   |      |
| ✓ notch of flukes to anus   | = 620                  |      |
| " " " " penis   | = 7651                 |      |
| " " " " part. base dorsal   | = 1010                 |      |
| " " " " " " pectoral  | = 1580                 |      |
| Pectoral tip to head humerus  | = 220                  |      |
| ✓ " " " " part. insertion   | = 163                  |      |
| ✓ " " " " ant. " "  | = 233                  |      |
| " " greatest breadth (at angle)   | = 105-                 |      |
| ✓ " base " "  | = 103                  |      |
| ✓ Height dorsal vertical  | = 1651                 |      |

For comparison with  
*P. delphi* True

|  |        |
|--|--------|
| Length bare dorsal   | = 360  |
| Flukes tip to tip  | = 469  |
| Ant. post. breadth flukes (greatest)   | = 180  |
| Depth notch  | = 30   |
| Length right lobe axially  | = 257  |
| " left " "   | = 245  |
| Depth peduncle at ant. inst. of flukes   | = 106  |
| " " midway between " " "   |        |
| and anus (which is where upper edge begins to slope down)  | = 304  |
| Depth peduncle at lower protuberance   | = 373  |
| Length blackble across tips  | = 49   |
| " " curved   | = 57   |
| Dist. apart of fins anteriorly below   | = 157  |
| " " " " posteriorly "  | = 203  |
| Length anal opening  | = 13   |
| Lower jaw extends beyond upper   | = 7    |
| Dist. from corner to corner of mouth over head   | = 275  |
| Girth of head at eyes  | = 685  |
| " " " in front of pectorals  | = 835  |
| " " body at post. insertion of dorsal  | = 1285 |
| " " " " anus   | = 817  |
| Corner of mouth to ant. inst. of fins  | = 210  |
| Dist. of eye above line of mouth   | = 20   |
| Length white area on sides (ant-post.)   | = 1175 |
| Dorsal fin begins 25 mil. behind the<br>junction of the 1st & 2nd thirds of <del>total</del><br>total length (measured along side) |        |

no 18

Lagenorhynchus obliquidens ♂ June 1/10 Aikawa Japan

This specimen was harpooned from the w/s "Taibai Maru No 2" about 5.0 miles from Aikawa. The animal was taken on the deck of the ship and lived for about three hours, finally dying from loss of blood. While alive I studied it carefully, taking all color notes immediately, and also taking a circumference measurement.

The animal "~~blew~~" every few seconds opening the blowhole widely, it then appearing <sup>as</sup> ~~as~~ a circular opening. This was accomplished by drawing the partitions between the points of the blowhole downward & forward. No vapour was visible when the animal ~~respired~~ blew probably because of the frequency of the respirations. The eye <sup>was always</sup> ~~was always~~ closed when the finger or any other object approached it, and the ~~sight~~ sight seemed fairly good. While the animal was alive it frequently raised its head & <sup>the</sup> posterior part of the body from the deck with a convulsive motion. Also it closed its jaws sharply upon a stick when it was placed in its mouth. It seemed to have considerable biting power & I imagine could produce rather a severe wound.

On the same day that this specimen was secured a number of others were

seen in schools of five or six. They skimmed along the surface frequently, but did not leap entirely out of the water as I have seen *D. delphis* do so ~~frequently~~ <sup>often</sup>. On the day following the capture, I saw several more schools of the same species. The gunners tell me that they see this porpoise frequently and it would seem to be abundant. *P. borealis* has also been reported as abundant by the gunners.

Color

~~Upper parts~~ <sup>on each side</sup> A line of dark gray 10 mil. wide, <sup>slight</sup> runs from the corner of the mouth in a <sup>slight</sup> curve down to the anterior insertion of the ~~lower~~ pectoral fins. It begins again at the base of the fin above, 40 mil. from the posterior insertion, curves slightly upward and then downward, upward again in a long sweep, & finally downward running off the peduncle 50 mil. behind the anus. The ~~line~~ comes down furthest on to the belly 160 mil. from the post. insertion of the fin.

All the throat, breast & belly below this  
 line ~~are~~ white. On the sides <sup>a point of being</sup> from <sup>the</sup>  
 middle of the dorsal fin to beyond the eye  
 is a <sup>in shape</sup> roughly elliptical area of light gray,  
 its lower edge bounded by the dark gray  
 line which separates it from the ventral  
 white area. This elliptical light gray  
 area is 180 mil wide in vertical diameter  
 at its widest point. It is prolonged  
 forward along the ~~upper edge~~ of the  
 V shaped crease and the ~~anterior~~ <sup>rostrum</sup>, and shades  
 gradually into the dark gray of the rostrum.  
 The eye is situated in a <sup>oval</sup> ~~apex shaped~~ area of  
 dark gray, the anterior end <sup>of which</sup> is prolonged  
 considerably forward. The edge of the  
 rostrum for a distance of 70 mil. <sup>up</sup> from  
 the point of the V is washed with gray.  
 The rest of the head & the back is very  
 dark gray. Opposite the posterior insertion of  
 the dorsal fin the dark gray of the back  
 runs down to meet the white of the belly  
 in a band 210 mil wide. This dark gray  
~~back~~ band divides the light gray area  
 of the sides of the anterior portion of the  
 body from ~~anterior~~ <sup>anterior</sup> ~~area~~ color on  
 the lower half of the peduncle which  
 extends back to the flukes. The median  
 keel of the flukes is also light gray.  
 The upper corner of this light gray



peduncle area is prolonged forward in a rapidly narrowing ~~line~~ streak of gray which reaches a point ~~on~~ the back nearly opposite the posterior insertion of the pectoral fin. ~~At~~ Opposite the base of the dorsal this gray band is 110 mil. wide.

The edge of the lower lip is dark gray which widens abruptly into a cap of dark gray 38 mil. long at the mandibular symphysis.

Pectorals ~~above~~ The anterior half of the pectoral fins for the entire length is dark gray, which shades into ~~a little~~ lighter gray of the posterior half. The whole tip of the fin is inclined to be a little lighter shade even along the anterior edge.

Below, the fins are like the superior surface except that the entire base is lighter.

The angle of the posterior edge is sharp & prominent.

Dorsal

Has anterior ~~edge~~ <sup>surface</sup> dark gray; at the base this dark gray edging is 80 mil. wide but narrows rapidly toward the tip until it is only 15 mil wide. The remainder of the sides and the tip of the dorsal is like the light gray of the sides of the body.

Fishes

Above & below dark gray.

As I have remarked ~~this~~ description was written while the animal was




yet alive. A short time after death the colors had begun to change; the dark gray of the back had become black and the light gray of the sides of the body was much darker. In consequence of these changes the contrast between the light & dark colors does not show in the photographs in its real value. The ~~animal~~ <sup>porpoise</sup> is a really beautiful animal when seen while retaining its natural colors.

External  
notes

The tip of the fin laid back is exactly opposite the anterior <sup>margin</sup> ~~edge~~ of the dorsal - this is the point of greatest girth.

There were no evidences of hair upon the body or head.

The stomach was empty.

The center of the eye directly below the blowhole - the blowhole is not quite regularly semicircular 

The superior outline of the peduncle from the dorsal to a point 330 mil. from the notch of the flukes is almost a straight line; it then rises slightly (about 10 mil.) & slants ~~up~~ gradually down to the flukes, its ridge becoming lost half way across its surface. The upper edge of the peduncle is rounded ~~but~~ near the dorsal but gets gradually sharper

where its outline begins to rise  
 until it is very sharp at the anterior  
 insertion of the pectorals. The posterior  
 edge of the dorsal is very thin - the ant.  
 edge not so

There is a slight ridge ~~over~~ the outline  
 of the head, at the eye.

The V of the ~~beak~~ is shallow & does not  
 meet in front, it is 90 mil. long on  
 the left side & is lost 100 mil. from  
 the corner of the mouth

### @ osteology

Scapula lies at an angle - the ant. end  
 is tipped slightly upward - glenoid fossa  
 is in an almost parallel line with body  
 axis - acromion points inward

13 pairs of ribs

5 " " articulates to sternum

$\frac{25-26}{26-26}$  dental formula

### Measurements of no. 18

|   |        |
|---|--------|
| Total length snout to notch straight              | = 1710 |
| " " " " " over back                               | = 1810 |
| Cr. of body opp. tip of fins laid back (greatest) | = 1000 |
| Snout to eye center                               | = 275  |
| " " Ear   | = 335  |
| " " blowhole (center)                             | = 295  |
| " " post. inst. pectoral                          | = 535  |
| " " " " dorsal                                    | = 1020 |
| Eye to ear center                                 | = 64   |
| " above " "                                       | = 8    |

taken while  
 animal was  
 alive.

Tip of lower jaw to corner of mouth = 235  
 corner of mouth to ant. inst. dorsal = 210  
 center of blowhole to center of eye = 510  
 center of blowhole to center of eye = 170

131

|  |        |
|--|--------|
| Length eye opening                           | = 22   |
| " ear "                                      | = .1   |
| Notch flukes to anus                         | = 490  |
| " " " penis slit (center)                    | = 665  |
| " " " navel (not certainly located)          | = 905? |
| " " " post. inst. dorsal                     | = 780  |
| " " " " " pectoral                           | = 1200 |
| Pectoral tip to head humerus (left)          | = 320  |
| " " " post. inst.                            | = 234  |
| " " " ant. "                                 | = 315  |
| " greatest breadth (at angle)                | = 102  |
| " " " " base                                 | = 110  |
| " distance between ant. of insertions below  | = 210  |
| " " " " post. "                              | = 250  |
| Height dorsal vertical                       | = 153  |
| " " axial                                    | = 240  |
| Length " base straight                       | = 230  |
| Flukes tip to tip                            | = 432  |
| " greatest breadth (ant - post.)             | = 155  |
| " depth notch                                | = 30   |
| Length right lobe axially                    | = 277  |
| " left " "                                   | = 279  |
| Greatest thickness flukes at insertion       | = 35   |
| Depth peduncle at ant. inst. of flukes       | = 105  |
| " " <sup>midway</sup> between " " " " + anus | = 180  |
| Length across tips of blowhole               | = 25   |
| " " " " curved                               | = 40   |
| " anal opening                               | = 20   |
| " penis slit                                 | = 105  |

no 40

*Glabrocephalus scammoni* Cope, ♂ June 26 / 10 Aikawa

This specimen, an adult male, was taken by ~~by~~ the ship "Taichi Maru no 2" Capt. Samuelsen, gunner, on June 26<sup>th</sup>. It was measured by me the same evening & photographed & described the following morning. I had been expecting this ~~for~~ a specimen of this species for Capt. Olsen of the "Pekku Maru" had told me that he saw several schools the day before & had fired at one.

I compared Scammon's figure with this specimen before it was pinned and noted the corrections on the plate. In his figure the superior outline of the body is almost a straight line, & this is far from being the case in my specimen. The eye in his figure is not correctly placed - it is ~~off~~ directly above the corner of the mouth. In my specimen the eye is above & considerably behind the mouth corner.

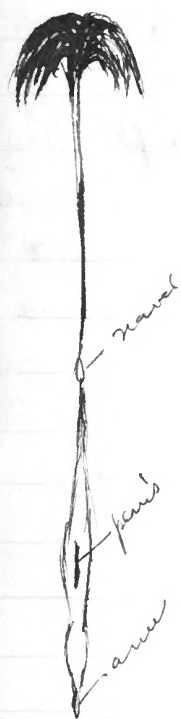
In Scammon's figure the throat is much too full; there is also a rather abrupt dip in the outline of the ~~lower~~ <sup>at the neck</sup> body in my specimen which is not shown in his figure. The base of the dorsal in Scammon's figure is much too short. The pectoral fins are also

placed too high on the side. The color of *Scorpaenopsis* specimen is given as "entirely black" - this is not the ~~same~~ case in my individual. Its color is as follows -

color

The color of the entire upper parts is black with the exception of an area immediately behind the dorsal fin which is light gray. This gray area has roughly the shape of a ~~triangular~~ <sup>triangular</sup>, its apex directed ~~backward~~ <sup>central</sup> toward the pectorals, and its longitudinal axis being the ridge of the back. The edges of this light area grade imperceptibly into the black of the back, excepting at the ~~posterior~~ <sup>apex</sup> where the transition is more abrupt. The ant. post. length of this gray area is 600 mil. Its furthest downward extension transversely from the ridge of the back is 200 mil. on either side. There is a small dash of gray 60 mil. long by 10 mil. wide, just below the ant. insertion of the pectorals on the left side only. The dorsal fin is faintly tinged with grayish - almost imperceptible. The lower parts are black except as follows: From the navel a ~~for~~ very narrow, purplish-gray line, starting as nothing, runs ~~on the~~ <sup>on the</sup> exact

Shape of ventral  
gray area.



center of the ventral surface, becoming gradually wider as it goes forward until slightly beyond the anterior insertion of the pectorals it spreads out into a fountain shaped purplish gray area. The anterior end of this area is notched in the center, & has rounded corners. It is ~~4~~ 20 mil. ~~from~~ <sup>it is</sup> from the tip of the under jaw. (a <sup>100 mil</sup> ~~little~~ behind line of corners of mouth)

Directly between the pectorals before the line spreads out, it is 16 mil. wide. The purplish gray area from the navel to its anterior end is 163 cent. long.

From the navel ~~backward~~ a less clearly defined, but wider, purplish gray ~~band~~ extends backward broadening gradually until at penis it is 140 mil wide, it narrows a little between penis & anus, then widens again slightly, & runs abruptly into the anal opening & is lost.

There is no indication of lighter color on the ventral surface behind the anus except the spot below the plexus insertion already referred to.

The outer layer of the epidermis is as thick as that of a megaptera.

Epidermis

Peduncle

The anterior of the peduncle is very unlike that shown in Scammon's figure. Instead of having the superior outline nearly straight until a short distance anterior to the flukes it is as follows:-

From the posterior edge of the dorsal there is a gradual slope downward to a point opposite the penis - then there is a gradual rise until at a point midway between the flukes insertion & the anus the curve reaches its greatest height; here the peduncle is deepest. From this point, the slope to the flukes is gradual & not abrupt as in Scammon's figure.

The lower outline of the body is as follows: - From the tip of the lower jaw to the penis the outline of the <sup>throat</sup> breast & belly is a regularly convex line but not as strongly convex on the throat as is shown in Scammon's figure. There is a sharp dip between the penis & the anus; the peduncle swells out a little directly behind this & then slopes gradually to flukes. The point of greatest swelling of the lower edge is a little anterior to ~~that~~ the greatest



Flukes

curve upward to the upper edge

Have the anterior edges regularly convex - the post. edges very slightly concave, notch deep. Black above & below. The posterior edge of flukes very sharp


Dorsal

is situated on a long base. It is thick & heavy. The post. edge of the dorsal is 520 mil. Anterior to the middle of the body. The ant. ins. is 270 mil. behind the axilla.

Pectorals.

Are <sup>narrow</sup> strongly falcate & tips pointed. The angle of the posterior edge is 140 mil. from the axilla. The length of the fin is contained a little more than five times in the length of the body over the curve of the side. <sup>The distal half of fins (excepting tips) have on the anterior edges a row of small hard spines.</sup>

Blowhole

is situated in a decided depression; it has the characteristic shape among the Delphinidae - a not quite regular semicircle.  The top of the head, <sup>& back</sup> from blowhole to dorsal is flat.

Navel

The navel is directly opposite the tip of the dorsal fin.

Head

The head is <sup>globose</sup> large, the extremity overhanging the snout. The "beak" is short rounded & not prominent. It is formed by a slight constriction on the sides and a depression in front.

Thickness of body.

The greatest thickness (depth) of body is at a point a little behind the anterior insertion of the dorsal fin.

@ Steology no 40 ♂

Vertebral formula:-

Vertebrae

|   |    |    |         |                     |
|---|----|----|---------|---------------------|
| C | D  | L  | Ca      | The last caudal is  |
| 7 | 11 | 13 | 28 = 59 | about the size of a |

small peg - The dissections were made with great care & the results are certainly correct

Piles  
Chevron 18 pro. none floating  
19 chevrons in series - the last is very small

The first pair of chevrons are very small and the laminae are far apart distally - the 2nd is larger & longer but still well separated distally - the 3rd is same height as 2nd but the laminae touch distally; they are not joined by ossification however. The 4th is same height as 3rd but are joined distally by ossification - the 5th is higher than 4th & has a longer spine. The 6th is higher than 5th & has shorter laminae but longer & narrower spine. The 7th is same height as 6th but the spine is wider. The 6th & 7th are highest of series; from this point back, the spines widen & decrease in height gradually. The last chevron is exceedingly small but is ossified.

These observations were made while the series were in situ, & do not mean the actual measured lengths of the chevrons.

Dental  
formula

8-8  
8-8

| Measurements of <i>G. scammoni</i> Cope    |        |
|--|--------|
| Length straight notch to extremity of head | = 4940 |
| " over back " " " " "                      | = 5000 |
| Snout to eye                               | = 530  |
| " " blowhole (over front of head)          | = 590  |
| " " base of dorsal (posterior)             | = 2040 |
| " " ant. inst. " over side                 | = 1560 |
| " " " " pectoral "                         | = 780  |
| " " corner of mouth "                      | = 400  |
| Extremity of head to eye (straight)        | = 490  |
| " " " " ant. base dorsal                   | = 1840 |
| " " " " post. " pectoral (over side)       | = 1170 |
| Dist. from eye to ear (center)             | = 170  |
| " Eye above ear                            | = 50   |
| Length eye opening                         | = 36   |
| " Ear "                                    | = 1    |
| Eye above corner of mouth                  | = 90   |
| " to " " " straight                        | = 120  |
| Post. inst. fin to " " "                   | = 720  |
| Eye to center of blowhole                  | = 500  |
| Blowhole to post. inst. dorsal             | = 1480 |
| Tip under jaw to ant. inst. pectoral       | = 730  |
| Girth of body at anus                      | = 1770 |
| " " " " insertion of flukes                | = 610  |
| " " " " ant. " " dorsal                    | = 2540 |
| " " " " " " " pectorals                    | = 2180 |
| " " " " post " " dorsal                    | = 2320 |
| " " head " eyes                            | = 2010 |
| " " " " corners of mouth                   | = 1900 |
| Notch of flukes to anus                    | = 1700 |

|   | mil.     |
|---|----------|
| Notch of flukes to penis (center)   | = 2180   |
| " " " " navel "   | = 2960   |
| " " " " post. nist. dorsal (straight)                                       | = 2960   |
| " " " " " " pectoral  | = 3960 ? |
| Length pectoral tip to head of <sup>humerus</sup> <del>pectoral</del> shaft | = 1060   |
| " " " " post insertion "  | = 8051   |
| " " " " ant. " "  | = 1030   |
| " " post. edge along curve  | = 8551   |
| " " ant. " " "  | = 1130   |
| Breadth " base  | = 2951   |
| " " at angle  | = 300    |
| Height dorsal vertical  | = 2751   |
| Length " base   | = 690    |
| Length pectoral axially   | = 1020   |
| Flukes tip to tip   | = 1180   |
| " greatest breadth ant. - post.   | = 350    |
| " depth notch   | = 63     |
| " length right lobe axially   | = 6151   |
| " " left " "  | = 600    |
| " greatest thickness at insertion   | = 751    |
| Depth peduncle at flukes insertion  | = 310    |
| " <sup>midway</sup> between anus & " "                                      | = 720    |
| Length blowhole across tips   | = 951    |
| " " curved  | = 1251   |
| Dist. apart of fins below posteriorly                                       | = 500    |
| " " " " " " anteriorly  | = 470    |
| Length anal crease  | = 2351   |
| " navel "   | = 40     |
| " penis "   | = 4651   |
| Upper gill extends beyond lower   | = 30     |

## "Freckshina maru"

no 49

Sword Fish July 19/10 Aikawa

I did not see this fish until two days after it had been killed; at this time the color is as follows:-

color

Back & upper sides dark purplish brown shading into light brown on the sides & belly; mandible and throat purplish silver. Abdomen from ventral fin to <sup>tail</sup> ~~flukes~~ purplish silver.

Upper lobe of tail like back - lower lobe tinged with silver. Color of eye ball green

measurements in mil.

Total length center of tail to tip of "sword" = 2950

Tip of snout (sword) to eye = 1100 (center of eye)

" " " " ant. insert. of first dorsal = 1310  
" " " " 2nd " = 2560  
" " " " first ventral = 2060

" " " " second " = 2480

" " " " pectoral = 1380

" of mandible to " " " = 445

" " " " corner of mouth = 225

" " " " tip of snout = 945

Height first dorsal (median) = 375

Breadth " " at base = 420

Height 2nd dorsal = 80

" " pectoral = 354

Breadth " at base = 89

Height first ventral = 235

Breadth base first ventral = 250

Height 2nd ventral = 69

Tail tip to tip = 700

Length upper horn equally = 550

" lower " " = 500

Dist from center of Tail to center of <sup>caudal</sup> ~~ventral~~ flange = 280

Length base of caudal flange = 200

no. 50

Sagenorhynchus obliquidens Gill. ♀ July 19/10 Akhara

This specimen had been killed two days before it examined it, but it was in good condition.

Color

In general the color description of no 18 applies to this specimen, <sup>except in</sup> the following points.

The anterior prolongations of the light gray <sup>on the sides of the head</sup> ~~are~~ areas ~~from~~ the eyes forward, ~~are~~ wider and lighter than in no 18. ~~The light face~~ ~~These~~ meet in the middle ~~of the line of the~~ ~~face~~ in front but become a little darker just at the middle line. The back below the V is all dark gray - the ~~white~~ light gray <sup>on the sides of the notochord</sup> ~~area~~ is all above the V.

The dark gray line which divides the white ventral, from the gray side areas is a little wider ~~than in~~ behind the pectorals than in no 18. Also 140 mil from the post. insertion of the fin there is a sharp angular projection of the gray line downward into the white of the ventral parts. This was not found on any of the other specimens.

The light gray area on the sides ~~is~~ behind the dorsal, covers the entire sides & all but the back. In no 18 it only covered the lower half of the peduncle. Just anterior to the flukes insertions the ~~mid~~ dorsal



ridge is also gray. ~~The~~

The dark gray <sup>on the</sup> anterior side of the dorsal is wider than in no. 15. That is, the light gray only covers the posterior half of the fin ~~as the~~ anterior half is dark gray.

The upper corners of the light gray pectoral areas ~~are~~ prolonged forward in <sup>two</sup> narrow <sup>parallel</sup> bands ~~out~~ to the back & forward almost to the blowholes.

#### External characters

The tip of the pectoral laid back ~~is not~~ does not quite reach to a line drawn down from the ant. insertion of the dorsal. In no. 18 it does.

The ant. commissure of the eye is ~~slightly~~ <sup>slightly</sup> behind the center of the blowhole. In no. 18 the center of the eye is below the blowhole.

The stomach was empty.

#### Measurements

|  | mil.   |
|--|--------|
| Total length snout to notch of flukes straight                         | = 2090 |
| " " " " " " " over back  | = 2250 |
| Snout to eye   | = 300  |
| " " corner of mouth  | = 254  |
| " " blowhole (center)  | = 310  |
| " " post. ins. of pectoral   | = 610  |
| " " " " " dorsal   | = 1245 |
| Tip of mandible to corner of mouth                                     | = 262  |
| Corner of mouth to <sup>center of eye</sup> <del>ant. not dorsal</del> | = 551  |
| Center of blowhole to " " "  | = 187  |

|  |        |
|--|--------|
| Corner of mouth to ant. most pectoral          | = 235  |
| Height eye above line of mouth (cent. of eye)  | = 25   |
| Dist. from corner to corner of mouth over head | = 407  |
| Length beak from apex of r to tip of snout     | = 54   |
| Breadth " at " " (over curve)                  | = 106  |
| Blowhole to ant. most dorsal                   | = 645  |
| Girth of head at eyes                          | = 765  |
| " " body in front of fins                      | = 1010 |
| " " " at anus                                  | = 670  |
| Length eye opening                             | = 25   |
| Notch flukes to anus                           | = 608  |
| " " " clitoris                                 | = 676  |
| " " " mammary slit (center)                    | = 663  |
| " " " navel (certain)                          | = 1134 |
| " " " post. most dorsal                        | = 1010 |
| " " " " " pectoral                             | = 1540 |
| Pectoral tip to head humerus                   | = 350  |
| " " " post. insertion                          | = 249  |
| " " " ant. " "                                 | = 330  |
| " " breadth at angle                           | = 112  |
| " " " base                                     | = 120  |
| Height dorsal vertical                         | = 165  |
| " " axial                                      | = 265  |
| Length " base                                  | = 290  |
| Flukes tip to tip                              | = 520  |
| " greatest breadth ant. post.                  | = 185  |
| Length right lobe axially                      | = 307  |
| " left " "                                     | = 304  |
| Thickness flukes at insertion                  | = 110  |

Depth notch of flukes = 35  
 Depth peduncle at " insertion = 110  
 " " between notch & anus (midway) = 207  
 Length blowhole straight across tips = 29  
 " " curved = 36  
 Dist. between pectoral fins below anteriorly = 244  
 " " " " " posteriorly = 277  
 Length anal opening = 9  
 Length entire mammary slit = 15  
 Lower jaw projects beyond upper = 9  
 @ St. Louis no 50

Ribs - 14 prs attached & 1 pr unattached, the latter being only about 2 inches long

Dental formula  $\frac{30-30}{29-27}$

Vertebral formula

|   |            |            |    |      |
|---|------------|------------|----|------|
| C | D          | L          | Ca |      |
| 7 | 14 (or 15) | 19 (or 18) | 37 | = 77 |

Chevrons 29

The first chevron has only the small laminae of the right side present.

The chevrons of the next four vertebrae are ankylosed into a solid bar, the laminae of both sides being present.

The chevron of 6th caudal has only the right lamina present - that of 7<sup>th</sup> caudal consists only of left lamina.

The chevrons of the 8<sup>th</sup> & 9<sup>th</sup> caudals have the laminae united ~~by~~ distally

but no spine - the 10<sup>th</sup> chevron has a  
 short spine; the chevrons of 13<sup>th</sup> caudal  
 is highest of series as they stand in  
 position

There are 29 chevrons counting those  
 of ankylosed bar as four.

No. 46

Color

Pectoral  
 fin & anal fin = 14.5  
 " " ant. fin. = 13.0  
 " " post. " (3) = 9.5  
 = 7.5  
 Breadth

Sperm ♂ July 14/10 Aikawa Japan  
 Slate - a gray (light) semicircular  
 patch curving about umbilicus.  
 & the side directly above washed  
 with grayish.

Length nuch. to extremity of head by cutters = 45"  
 Flukes to hump (dorsal) = 53.8 cent.  
 Fin tip to post. vent. = 95 "  
 " " " ant. " = 140 "  
 Height hump = 25 "  
 Flukes breadth ant. post. = 105 "

## "Go Hagei"


No 47

ColorColor

Sperm ♂ July 14/10 Aikawa  
 This whale was drawn out upon  
 the slip & measured carefully.

General color slate. Just in front  
 of the umbilicus is a semicircle  
 of gray (light) the convexity backward.  
 That is, the mark curves backward  
 from the nuch. on the sides.  
 (The same mark on same position  
 on the Van. do. specimen) A few light  
 gray dashes along upper edge of  
 peduncle & just below eye on the  
 side of the head. The upper half of  
 the lower jaw is white - the upper  
 lip is white marked with dark spots.  
 There is a marked dip just behind  
 the head in the outline of the back.

External  
 characters

The top of head is straight, then  
 the dip at base of skull in back  
 outline - three or four small  
 & crenulations behind "hump" on  
 dorsal ridge. Hump like this  
 There is a prominent  
 swelling on the head  
 at eye - the outline is like  
 this 

From a little below line from  
 eye to ex. of head the lower half  
 of head (or upper jaw) is wedge shaped.



Roughly this is shape of cross section of  
 head at extremity.

On the throat from the  
 beginning of the branching of  
 the mandibular ramus to a  
 little behind corner of mouth  
 there are 10 short creases; 5 on  
 either of the <sup>low</sup> median throat ridge;  
 the longest of these is 60 cent.  
 notch of slugs narrow & deep.

There were a few fresh, deep "cups" evidently  
 left by parasitic cirripeds  
 (measurements see opposite page)

## Measurements of No. 47 ♂

|   |         |
|---|---------|
| Total length notch of flukes to extremity of head         | = 145.5 |
| Ext. of head to eye (st.)                                 | = 38.0  |
| " " " " post. inst. blowhole                              | = 54.5  |
| " " " " corner of mouth                                   | = 32.5  |
| Tip of mandible to " " "                                  | = 22.6  |
| Ext. of head to "tip" in back outline at base of pectoral | = 53.5  |
| Notch flukes to anus                                      | = 46.5  |
| " " " " penis (center)                                    | = 63.5  |
| " " " " navel   | = 76.5  |
| " " " " center of dorsal "hump"                           | = 59.0  |
| Pectoral tip to head humerus                              | = 145.1 |
| " " " " post. inst. P (hard to locate)                    | = 95.1  |
| " " " " ant. "  | = 13.0  |
| " " " " greatest breadth                                  | = 7.5   |
| Height of "hump" vertical                                 | = 3.5   |
| Greatest breadth flukes (ant - post)                      | = 1.3   |
| Depth peduncle at ant. flukes insert.                     | = 9.0   |
| Length blowhole (st.)                                     | = 6.0   |
| " " " " curved ( <del>photographed</del> )                | = 6.8   |
| Anus to penis center                                      | = 17.0  |
| " " " " navel   | = 30.0  |
| Ext. of head to tip of under jaw                          | = 9.0   |



NO 48

Specimen ♂ July 14/10 Aikawa Japan  
Drawn and measured  
carefully.

Color

General color slate - same light gray  
markings about genitalia  
as in others.

External  
characters

A slight dip at base of head - a slight  
concavity in head outline.

Meat very dark red. Blubber  
yellowish white

Measurements

|                                   |        |
|-----------------------------------|--------|
| Total length ex. of head to notch | = 1395 |
| Ex. of head to eye                | = 375  |
| " " Ear                           | = 411  |
| " " post. int. pectoral           | = 525  |
| " " corner of mouth               | = 317  |
| Vip. mandible to " " "            | = 222  |
| Eye to ear                        | = 46   |
| " above "                         | = 18   |
| " opening                         | = 7    |
| Ear "                             | = 9    |
| Notch flukes to anus              | = 405  |
| " " " penis (center)              | = 572  |
| " " " dorsal hump (center)        | = 530  |
| Breath flukes (ant. - post.)      | = 104  |
| Depth peduncle at flukes inst.    | = 85   |
| Length blowhole (st.)             | = 41   |
| " " axially                       | = 48   |
| Anus to center of penis           | = 167  |
| Depth notch of flukes             | = 31   |

3.30 G. W.

No 52

Sperm ♂ July 23/10 Aikawa

(skeleton taken)

Whale drawn out on slip + measured carefully.

Color

General ~~slate~~ color slate. Much light gray about genitalia and on the sides directly above a far as mid <sup>lateral</sup> ~~ventral~~ line.Flecks + dashes of light gray along ventral line almost to flukes. Small scattered patches + flecks of light gray over ~~throat~~ breast clear to corner of mouth.The extremity of the head (the lower two thirds) is white; the upper third is very light grayish which shades gradually into the white of the lower two thirds. On the sides of the head from the extremity to the corner of the mouth ~~the~~ it is very light gray "cross-crossed" in every direction with white lines and narrow bands.

The whole mandible from a point anterior to the branching of the ramus is white marked rather faintly with small oblong grayish marks pointing fore and aft from a point a little behind the corners of the mouth to the branching of the mandibular ramus.

(that is the area occupied by the throat creases) the color is mixed gray & white, "pepper & salt."

The color of the body changed very quickly from slate to brownish black when the animal was drawn out of the water.

External  
Characters

There are a great number of short shallow creases on throat between the ~~base~~ <sup>base</sup> of the mandible & to a point a little behind the corners of the mouth.

At base of skull where the head was disarticulated from the vertebral column, the head was 9 ft 6 inches in diameter, including blubber.

The entire epidermal layers peel off very easily - the outer one is almost as thin as that of a blue whale.

The "wrinkles" of blubber extend forward as far as a point opposite the eye, but only on top of head.

Just behind corner of mouth blubber is 3 1/2 cent. thick - this is thickest place on head. Blubber white, with a yellowish

tinge.

The bunch behind anus is prominent

The hump is high & sloped like this



Flukes

Above & below plate with no markings. The outside (posterior) is strongly & regularly convex. The ant. edge is but slightly convex.

Teeth

23:

In the upper jaw there 17-19 were 24 teeth all but four of which (2 on each side) were embedded in the gum & could only be found by cutting into it. The teeth that were visible were about the middle of the jaw.

Heart & Lung

Very small in comparison with those of a Blue, Finback or Humpback.

Head

The blubber is comparatively thin; next comes a layer about 6 in. thick of large tendons (about an inch in dia.) running fore & aft. Below this is ~~the~~ a second thick layer of fat thickly run thru' with small fibrous bundles. Next comes the spermaceti case which contains the oil in a more or less liquid

condition - it is probably <sup>almost</sup> wholly  
liquid in life. Below the case  
is much perimacilli run  
thru with small & transverse  
fibres with ~~not~~ <sup>less</sup> than a large  
thick ridge.

### Osteology

10 fcs of ribs

Vertebrae

### Measurements

|  |         |
|--|---------|
| Total length ext. of head to notch over back | 59 1/2" |
| Ext. of head to eye                          | = 380   |
| Notch flukes to anus                         | = 466   |
| " " " penis                                  | = 656   |
| " " " navel                                  | = 756   |
| " " " cent. of dorsal hump                   | = 650   |
| " " " post. insert. pectoral                 | = 1015  |
| Pectoral tip to head humerus                 | = 168   |
| " " " post. insert. (?)                      | = 114   |
| " " " ant. " "                               | = 148   |
| " greatest breadth                           | = 78    |
| Height hump vertical                         | = 60    |
| Flukes tip to tip                            | = 450   |
| " greatest ant. post. breadth                | = 157   |
| " depth notch                                | = 45    |
| Length right lobe axially                    | = 230   |
| " left " "                                   | = 240   |
| Thickness flukes at insertion                | = 30    |
| anus to penis                                | = 190   |
| " " navel                                    | = 290   |

no 53

Finback ♀ July 24/10 Aikawa  
A dark whale.

Eng. feet

Total length snout to notch along side = 51' 6"  
Flukes to post. int. pectoral = 45'  
" " dorsal (post.) = 15' 5"  
Snout to eye = 14' 6"

[ These measurements were taken  
by myself with the cutter's line ]

no 54

Finback ♀. July 25/10 Aikawa

A rather dark whale. Behind the anus the gray of the sides covers all but a very narrow strip on the ventral edge of the peduncle. (it comes down further than usual on the sides). The white ventral line in its widest place behind the anus is only 8" wide. The points extending toward anus are well marked.

Where the gray portions of the sides of the rat & breast shade into the white ventral region, they had turned to a light sepia by the time it was brought to the station having been in the sun for a considerable time. I have seen the same thing present in many other Finbacks where they had been for some hours in a strong sun. This will explain

why one European author described the color of Balaenoptera physalus as shading the dark upper parts into light sepia + then into the white of the lower regions. In fact the first Finback I ever saw (at Van. Is.) I described in this way.

The gray prolongations on the sides are broad & long, those on the left side reaching the mid ventral line. There is also a <sup>longitudinal</sup> narrow shading of gray on the ventral line, a little anterior to the navel.

Pectorals

Have the usual coloration of the Finbacks.

Dorsal  
Baleen

Has typical Finback shape.

In this whale the usual white portion of the baleen on the ~~right~~ right side is lacking. From a distance of 22 inches from the tip, the baleen plates are light colored but only 2 are entirely white & the effect is like that of the Sei whale baleen when observed at ~~an~~ from the side. The usual white fortification of the under edge of the rostrum is present but is not clear white - it is tinged with grayish. The baleen plates are striped and look



exactly, like those of other Furibocke.

### Measurements

|                                   | Eng. feet |
|-----------------------------------|-----------|
| Total length along side           | = 64' 4"  |
| Flukes to post. inst. of pectoral | = 42 5"   |
| " " " " " dorsal                  | = 16'     |
| Snout to eye                      | = 13' 3"  |
| Flukes to anus                    | = 18' 8"  |
| " " " navel                       | = 26' 6"  |
| Pectoral tip to head humerus      | = 8' 1"   |
| " " " ant. inst.                  | = 7'      |
| " " " post. "                     | = 5' 3"   |
| " " greatest breadth              | = 1' 10"  |
| Height dorsal vertical            | = 15"     |
| Length baleen row                 | = 12' 10" |
| " longest plate baleen            | = .3'     |

These measurements were taken with a cloth tape as all the succeeding ones will be. My steel tape is broken.

nos 5- Blue Whale ♀ July 26/10

a light whale. The line of white markings from root of fin down & back is scattered. The light gray markings are especially thick on lower back ~~above~~ directly above fin - many white scars on peduncle. The light gray markings follow down close to the ends of the folds but do not run over on them. There are a few grayish markings on upper surface of fin. A few large ashy markings on right runcis. Dorsal very low & has anterior edge whitish - shape like this

Pectorals

Dorsal

Riles

15 pro ribs sure

Milk

Milk was flowing from mammae & the mammary glands were greatly enlarged. The looked exactly like those of the Humpback which I described at Van. d. z.

Scapula

The upper edge of the scapula shows plainly ~~scars~~ a depression immediately above it (before flexing) and I believe that my theory that the depression observed on the backs of living Hump &

Emibarks is produced by the action of the scapular muscles, is correct.  
Measurements.

|                              |                     |
|------------------------------|---------------------|
| Total length with to snout   | = 76' 10"           |
| Snout to eye                 | = 15' 10"           |
| " " blowhole                 | = 14'               |
| with " dorsal                | = 18' 4"            |
| <del>with</del> " anus       | = 21' 6"            |
| " " navel                    | = 33 8"             |
| " " pectoral post. inst.     | = 52' 3"            |
| Height dorsal                | = 6"                |
| Pectoral tip to head humerus | = <del>11' 4"</del> |
| " " " ant. inst.             | = 9' 4"             |
| " " " post. "                | = 7' 6"             |
| " breadth                    | = 2' 10"            |
| Eye to ear                   | = 4' 2"             |

29.m. - cut at 4 a.m.

Rex Main

No. 56

Sperm ♀ July 28/10 Arbawa

Cut at end of wharf in water.

Color

General color slate. There is a large subcircular <sup>almost</sup> patch of pure white extending back to <sup>almost</sup> genitalia & well up on sides. This is same place where others are usually gray & same shape of patch but larger. Immediately above it on the upper sides <sup>(left)</sup> is a smaller patch (irregular) of pure white; there is also a large irregular patch of white at anterior base of dorsal hump. ~~The sides from the white patches~~ forward to pectoral fins are washed with gray. Gray washing about genitalia. A good many white scars & barnacle crests on lower half of head.

Petrol

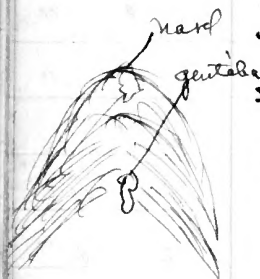
Have a few rather small gray markings above.

Four small crenulations aft of dorsal hump.

Teeth

$$\begin{array}{c} 23-20 \\ \hline \end{array}$$

upper teeth not visible.



## Measurements No. 56.

|   |          |
|---|----------|
| Total length ex of head to notch <sup>by cutters</sup> along side | = 37' 2" |
| Notch to hump center  | = 13' 9" |
| " " anus  | = 12' 4" |
| Ex of head to eye (straight)                                      | = 7' 9"  |
| Flukes tip to tip   | = 9' 10" |
| Length mammary slit   | = 12"    |
| Dist. between " "   | = 8"     |
| Height hump (vertical)  | = 10"    |
| <del>Front</del> Fin tip to head hump                             | = 3' 9"  |
| " " ant. fin  | = 3' 3"  |
| " breadth   | = 1' 8"  |

No 57

Specimen ♀ July 28/10 Aikawa  
 General color slate. Much light gray about navel in the usual semicircular patch - <sup>light</sup> gray on sides above navel in small patches & markings, and forward on sides to fin in small flecks. On the head from the blowhole on a line to the eye, are ~~some~~ a few <sup>light</sup> gray markings. Also a few white circles like those on Humpback. Edges of upper lips and jaw white - snout slate except for a few circles of white.

head

I do not believe that age makes any difference, or at least but very little, in the sharpness of the V of the lower portion of head; all the specimens I

have examined have been about the same.

There is a bulge on each side at the mandibular condyles.

Throat  
furrows

There seems to be no definite arrangement of the throat furrows in this species but their position remains constant.

Milk  
Flukes

Milk was flowing from the mammae above & below slats - The posterior edge strongly convex & the anterior margin slightly so - notch deep. The <sup>highest</sup> point ~~of~~ in the convexity of the posterior edge is at the junction of the first & second thirds of the fluke (proximally)

Teeth

22  
24-24 The Teeth sharp & only slightly worn on the "anterior-outside". The teeth in the upper jaw ~~are~~ are visible in several places. They are usually situated above & a little in front of the socket into which the lower tooth fits. In some cases however they are a little behind & above socket & in others directly above it.

There were about fifty individuals in this school.

no. of  
whales  
in school

Ribs  
Eye

10 pra.

There is a gradual but rather prominent bulge in <sup>side of</sup> head outline just in front of and above eye. The eye itself is very small & deeply situated - <sup>the eyeball</sup> ~~it~~ does not bulge outward as in the Myxosceli. The lids are thick and heavy; <sup>the opening is 2 inches</sup> there are two short semicircular creases, one above & one below the eye. The general effect reminds me of an elephant's eye. Iris hazel brown.

Ear

The ear is an elliptical opening one inch in diameter (horizontal) situated eleven inches behind and four inches below the eye. A good sized pencil could easily be inserted for its entire length. (The ~~ear~~ auditory meatus is thus much larger than in the Myxosceli.)

### Measurements

|                                    |            |
|------------------------------------|------------|
| Total length Ex. of head to notch) | = 33' 11"  |
| Notch of flukes to center of hump  | = 13' - 2" |
| " " " " anus                       | = 11' - 1" |
| " " " " navel                      | = 18' - 3" |
| " " " " pectoral (post. ant.)      | = 23' - 1" |
| Ex. of head to eye.                | = 7' - 4"  |
| " " " " corner mouth               | = 5' - 10" |
| " " " " post. inst. fin.           | = 11' - 3" |
| Tip of mandible to corner of mouth | = 4' - 6"  |



|  |        |
|--|--------|
| Dist. between corners of mouth (below) =   | 2'-10" |
| Eye to corner of mouth =   | 2'-4"  |
| " " blowhole (center) =  | 6'-8"  |
| Length blowhole (straight) =   | 12"    |
| " " (curved) =   | 13"    |
| Cent. of blowhole to tip of mandible (closed) over the curve of the side of head =             | 5'-3"  |
| Tip of lower jaw to ext. of head - taken in center of head from line drawn up from lower jaw = | 1'-6"  |
| Height hump vertical center =  |        |
| Fins tip to tip =  | 9'-6"  |
| Ant-post breadth =   | 3'-5"  |
| Depth notch =  | 12"    |
| Eye to ear =   | 11"    |
| " opening =  | 2"     |
| Ear " =  | 1"     |
| Fin tip to head humerus =  | 3'-5"  |
| " " ant. inst. =   | 2'-10" |
| " breadth greatest =   | 1'-8"  |

The measurement from tip to post. inst. of fin is very unsatisfactory & can seldom be accurately taken, therefore I have omitted it.

[contained a small foetus (preserved)]

no 58

Sperm ♀ July 29/10 Aikawa, Japan  
Drawn-out on slip. whale had two "humps".

Color

General color slate. There is a crescent shaped patch in front of genitalia as usual & gray extends up to the mid-lateral line. ~~as usual~~

The gray patches are large & heavy. Many light gray flecks & dashes along sides, on the sides of the peduncle, and a scattering line of them obliquely forward on to the lower back.

A few extend forward on the sides as far as pectorals. A few gray flecks & patches between pectorals on the breast. No light gray immediately about navel. A few light gray flecks on upper sides near & behind first hump. A ~~scattered~~ line of scattered rather large light gray marks from eye to blowhole. Lower two-thirds of extremity of head white mixed with gray - upper lips white & mandible white, its central portion thickly marked with <sup>small</sup> longitudinal oblong gray spots.

Head &  
Back  
Outline

The outline of top of head from the extremity to base of skull is slightly concave - ~~just~~ <sup>at</sup> base of skull there is a rise & from here to first hump back outline very slightly concave;

from the first hump to the flukes the surface of peduncle ridge is a straight slant broken by <sup>low</sup> creulations and a second "hump" just in front of flukes which is as large as the first hump.

Flukes  
Throat  
creases

Post. edge injured

The creases are very short & irregular anastomosing frequently. They occupy a space from the branching of the mandibles to about one foot behind corners of mouth. They are only in the central portion on either side of the median "keel" & do not extend up to corners of mouth.


Blowhole

The blowhole is situated in the center of a prominent bulge or swelling which rises abruptly on the left side of the head near the extremity; the anterior end of the blowhole is just 13 inches behind a line drawn ~~from~~ up from the extremity of the head.

Below the swelling of the blowhole on the left extremity of the head is a broad shallow but well marked depression which runs from the extremity of the head to about opposite the posterior end of the blowhole where it broadens out & is lost. The thick upper wall

Teeth

23-23

of the blowhole is higher than the lower, (as that on the left side) and rises more abruptly. ~~from the~~ In this specimen the blowhole is ~~not~~ angular & does not have the shape seen in the former ones it is like this 

Ribs

10 prs.

This animal seems to have a disproportionately short head. Where such a great difference in size between the male & females is found, variations in the proportions of the body may also be expected.

## measurements

|                                   |           |
|-----------------------------------|-----------|
| Total length Ex. of head to notch | = 41'-2"  |
| notch flukes & anus               | = 13'-3"  |
| " " " navel                       | = 22'-5"  |
| " " " anterior dorsal hump        | = 16'-4"  |
| " " " posterior " "               | = 5'-4"   |
| " " " post. int. pectoral         | = 27'-10" |
| Ex. of head to eye (straight)     | = 8'-5"   |
| " " " " corner of mouth           | = 7'-3"   |
| Tip mandible to " " "             | = 5'-10"  |
| Dist. between cor. " " below      | = 3'-7"   |
| Eye to " " "                      | = 2'-8"   |
| " " " Ear                         | = 13"     |
| " above "                         | = 3"      |
| " opening                         | = 2.5"    |
| Ear "                             | = 1"      |
| Eye to blowhole center            | = 8'-2"   |

shimmer, wet  
and give fish men

|                                      |           |
|--------------------------------------|-----------|
| Ex. of head to post. nostr. pectoral | = 13'-10" |
| Length blowhole (st.)                | = 1'-4"   |
| Finn tip to head humerus             | = 4'-2"   |
| " breadth                            | = 2'-2"   |
| Flukes tip to tip                    | = 11'-10" |
| " depth notch                        | = 13"     |
| " ant-post. breadth                  | = 4'      |
| Height hump                          | = 7"      |
| Dist. between mammary slits          | = 11"     |
| Length                               | = 14"     |

no 59

Color


Specimen ♀ July 29/10 (juv.?) Aikawa  
Cut in the water at end of wharf.

General color slate - little gray about  
navel, but the light gray color is heavy  
along sides from opposite navel to  
fin - A few white flecks on throat -  
light gray flecks along the inferior  
edge of the peduncle from anus to  
almost to flukes. The whole lower  
half of head is light gray marked  
with very light gray dashes.  
Cross section of head is this:



Teeth 0-0 anterior teeth  
24-24 not above gum

Measurements of no 59

|   |   |
|---|---|
| Total length (by cutters)                   | = 30'   |
| Flukes tip to tip                           | = 8'-11"  |
| Notch to hump (center)                      | = 14'-1"  |
| " " anus                                    | = —   |
| Height hump                                 | = 7"  |
| Ext. of head to eye (straight)              | = 7'-10"  |
| " " " " cor. of mouth                       | = 6'-5"   |
| Tip mandible to " "                         | = 4'-4"   |
| Eye to blowhole                             | = 7'-6"   |
| Blowhole (center) to tip of mandible closed | = 5'-1"   |
| Length blowhole (straight)                  | = 10"   |
| Blowhole angular                            |  |
| Fin tip to head humerus                     | = 8'-6"   |
| " " breadth                                 | = 1'-7"   |

no 60

Sperm ♀ July 29/10 Aikawa, Japan


This whale contained foetus no 60a

Color

General color slate. The light gray color is in bands about 2 inches wide, which run from genitalia to lower sides forward; <sup>shades on the sides go</sup> ~~to breast~~ half way to pectoral fins, ~~and on the sides these bands end~~ in a mass of fine dots which reach nearly to the pectorals and give a "jeffer & salt" effect. The band on the ventral surface runs from the genitalia to the navel coming together there in a point. These bands give a peculiar striped

Blowhole

appearance to the whale

Angular like no 59 only the angle is a true right angle 

Eye


The eye was preserved in alcohol. The eyeball has the shape of a wide ellipse - almost round; its circumference is 175 mil. (circumference) The pupil is 10 mil. in length and slightly crescent shaped. The iris is dark chestnut - its long diameter is 25 mil. There is then a narrow ring of bluish white, which is sharply differentiated from the outside elliptical ring of dark gray. The remainder of the eyeball is yellowish white.

Teeth

o - o  
24 - 24

no sign of upper teeth was found by cutting into the gum measurements

|                           |          |
|---------------------------|----------|
| Total length (by cutters) | = 31'    |
| Notch flukes to hump      | = 14'-1" |
| " " " anus                | = 10'-7" |
| Height hump               | = 8 1/2" |
| Ext. of head to eye       | = 7'-9"  |
| " " " corner of mouth     | = 6'-1"  |
| Tip of mandible to " " "  | = 4'-9"  |
| Dist. between " " "       | = 2'-11" |
| Eye to Ear                | = 12"    |
| " " corner of mouth       | = 2'-4"  |

 shape of hump.



no 60a

Sperm Foetus ♂ (mother no 60)

This animal was fully formed had thick blubber, & heavy epidermal layers & gave every appearance of being ready for birth. I am sure it would have been born within a few days.

Color

General color of body light slate - a little lighter than of the adult. The entire lower section of the head, from a point a little behind and below eye to the shallow depression below the blow-hole is white tinged with grayish. An area at the base of the skull in a line with the blowhole is grayish white -

From navel to anus & a little way up on sides whitish; streaks of whitish along sides nearly to fins. The entire lower parts from navel to a point about opposite eye are very light grayish. The ~~grayish~~ upper lips & edge of mandible pure white.

Flukes

Light slate like body; the left lobe below has a scattering line of white spots (small) from the anterior insertion half way across lobe - also on the anterior edge. Right lobe unmarked.

Body Outline

Head outline has no concavity (it is a straight slant upward from ~~of~~ extremity to ~~base of~~ proximal end. There is then a sharp dip at base of head and a slight

convexity to hump. From hump back-  
ward to a short distance from flukes  
insertion the body outline is a straight  
downward slant broken slightly by four  
low creulations - there is just an  
indication of a second hump ~~and~~ and  
then the slant to the flukes is rapid.

Blubber

On the sides the blubber is  $2\frac{1}{2}$  inches  
thick.

Osteology

The bones were almost all ~~fully~~  
ossified altho' soft bone.

Scapula

The long axis of the scapula as it  
stands in position is vertical - the glenoid  
fossa is tipped forward at a slight angle -  
the acromion is quite deeply imbedded.  
The center of the glenoid fossa of the scapula  
is exactly above the anterior edge of  
the sternum as they stand in position.

Only the posterior half of the scapula  
lies on the ribs - the anterior half covers  
the space between the first rib and the  
base of the skull which in life is  
occupied by the <sup>nasal</sup> gullet cartilage.

Ribs

The first rib articulates directly to the  
sternum; the next two ~~ribs~~ have long  
sternal ribs which articulate to the sternum.  
The costal cartilages on the fourth and  
fifth ribs are closely joined & the  
fourth articulates to the sternum but the

fifth does not reach by about an inch. The sixth & seventh costal ribs are close together distally but do not reach sternum. The 8<sup>th</sup> is very short and is only a point of cartilage.

There are ten pairs of ribs, the last two being very short.

### Head

The tube of the blowhole (which is lined with dark epidermis) runs along just under the blubber, and opens on the left side of the top of the head near the extremity. Directly below the blowhole tube is the case containing the more or less liquid spermaceti; the walls of this case are tough and fibrous.

Below (directly) the spermaceti case is a second tube lined with gray epidermis which opens forward <sup>up</sup> around the anterior end of the oil case into the blowhole. Posteriorly this second tube opens into a large, shallow, upright chamber lined with epidermis, ~~immediately~~ <sup>behind</sup> which lies immediately behind the posterior end of the barrel-like spermaceti case. A tube the size of my finger <sup>at the bottom</sup> leads from this shallow chamber into the posterior narial opening. The tube which leads ~~to~~ the upper blowhole tube which leads into the posterior nares

is the size of three fingers - much larger than the lower one.

Under the oil case (below the second tube) is ~~more~~ spermaceti is a solid condition, which is run thru with small filters.

Petrels

The formula for the phalanges of one of the pectorals is as follows -

|   |    |     |    |
|---|----|-----|----|
| I | II | III | IV |
| 3 | 5  | 4   | 2  |

### Measurements

|  |                        |
|--|------------------------|
| Total length (straight)                    | = 3950 <sup>mil.</sup> |
| " " over back                              | = 4050                 |
| Ext. of head to eye straight               | = 780                  |
| " " " cor. of mouth                        | = 654                  |
| Tip of mandible " " "                      | = 400                  |
| Corner to corner of mouth (below)          | = 307                  |
| " of mouth to eye                          | = 245                  |
| Eye to blowhole (center)                   | = 660                  |
| Cent. blowhole to tip of mandible (closed) | = 525                  |
| Ext. of head to post. most. fin            | = 1330                 |
| Eye to ant. most. fin                      | = 395                  |
| Length blowhole straight                   | = 93                   |
| " " curved                                 | = 115                  |
| Eye to Ear                                 | = 135                  |
| " above "                                  | = 18                   |
| " opening                                  | = 33                   |
| Ear "                                      | = 4                    |
| Notch flukes to anus                       | = 1400                 |

|   |        |
|---|--------|
| Notch flukes to navel                   | = 2160 |
| " " " penis                             | = 1900 |
| " " " post. inst. fin                   | = 2790 |
| " " " cent dorsal hump                  | = 1660 |
| Flukes tip to tip                       | = 1010 |
| " ant. post. breadth                    | = 505. |
| " length right lobe axially             | = 605. |
| " " left " "                            | = 635. |
| " depth notch                           | = 105. |
| Height hump vertical                    | = 90   |
| Depth body at flukes inserted           | = 303  |
| " " between " " + <sup>midway</sup> ams | = 559  |
| Semi-cir. body at ams                   | = 770  |
| " " " in front of fins                  | = 1000 |
| " " head at eyes                        | = 950  |
| Dist. between ant. inst. fins below     | = 495. |
| " " post " " "                          | =      |
| Fin tip to ant. insertion               | = 496  |
| " " " post. "                           | = 295. |
| " breadth                               | = 214  |

Go Hoge 3 P.M.

No 61

Sei whale ♀ July 30/10 Aikawa

A strongly bluish whale. A white band runs from ant. inst. fin down & back obliquely ending at mid ventral line about 18 inches in front of furrows. This band ~~is~~ <sup>was</sup> parallel with the ends of the furrows. Between this white band & the ends of furrows the fold are dark gray, thus making a band of dark gray about 18 inches wide which is darker than the surrounding body parts and is the band I have referred to in other descriptions. The white band is prominent in this specimen - in other whales I have seen it was only suggested.

From navel to genitalia ventral line is white - from genitalia to flukes ventral line is like sides of peduncle. Many small patches of white about genitalia.

Great number of white scars on peduncle sides. Thirteen folds under fin on right side are gray. About two feet anterior to flukes the gray markings cease leaving this plain blue gray.

The dark blue gray of the dorsal ridge occupies just ~~a quarter~~ of the upper fourth of the peduncle and shades gradually into light blue gray. The grayish markings on dorsal quarter are scattered & very dark. Anterior to the

dorsal fin the dark blue gray occupies the upper one third & shades into light blue gray on lower two thirds. There are a few scattered gray markings over ventral line between ~~snout~~ & ends of pectorals & a very few run over onto folds.

### Measurements

|                                    |                                 |
|------------------------------------|---------------------------------|
| Total length (by cutters)          | 18'24" = <sup>1524 mm</sup> 50' |
| snout to anus                      | 434 = 14'-3"                    |
| " " dorsal                         | 483 = 15'-10"                   |
| Snout to eye                       | 330 = 10'-10"                   |
| Depth peduncle at flukes insertion | 94 = 3'-1"                      |
| Height dorsal                      | 53 = 1'-9"                      |
| Flukes ant-post breadth            | 112 = 3'-8"                     |
| Finn tip to head humerus           | 218 = 7'-2"                     |
| " " " ante. wrist                  | 183 = 6'                        |
| " " " post "                       | 145 = 4'-9"                     |
| " breadth                          | 46 = 1'-6"                      |

No. 62

Sei whale ♀ July 31/10 Aikawa

Color Entire ventral line from end of pectorals back light pink - near flukes the pink occupies only the very edge. There is no gray band across belly & but very little gray on sides.

Right lip gray shading into very light gray on ramus. The gray of the lip extends to fin & just above fin (including eye) all the folds of the central throat



breast are tinged with pink. the folds of the belly have little pink - are almost white. On the right side only the ramus is gray but the gray color spreads ant backward ant to 10 folds between corner of mouth & fin. The pink in the furrows is deeper than that on the folds. There is a suggestion of the gray abdominal band but it stops far short of the ventral line & is only suggested.

Top of head clear blue slate - there are two prominent but broken ridges on each side of the median ridge & running parallel with it.

These ridges begin opposite the blowhole and here each one is about 8 inches from the median ridge; at the tip of the snout where they end ~~the two~~ each is about 2 inches from the median ridge.

Under edges of snout for about one foot are pinkish

Flukes

Below have a narrow posterior edge of gray and rest of lower surface a delicate pink thickly lined with fine gray lines so that general effect is a little lighter than sides of peduncle. The fine grayish lines run from anterior

edge in a curve across lobe curving  
in toward notch. On distal portion  
of lobe they curve across from anterior  
edge & then turn sharply inward  
running along post edge

The general effect of flukes below  
is pinkish-gray.

measurements.

|   |                         |
|---|-------------------------|
| Total length                              | 1285 = 42' - 2"         |
| Flukes tip to tip                         | ✓ 348 = 11' - 5"        |
| " left lobe axially                       | ✓ 190 = 6' - 3"         |
| " right " "                               | ✓ 193 = 6' - 4"         |
| Height dorsal                             | ✓ 31 = <del>5</del> 12" |
| Notch flukes to dorsal                    | ✓ 368 = 12' - 1"        |
| " " " anus                                | ✓ 366 = 12"             |
| " " " navel                               | ✓ 356 = 11' - 3"        |
| " " " post. inst. <sup>9/4</sup> pectoral | ✓ 229 = 30'             |
| Snout to eye                              | ✓ 229 = 9' - 2"         |
| " " blowhole (center)                     | ✓ 236 = 7' - 9"         |
| Fin tip to head humerus                   | ✓ 178 = 5' - 10"        |
| " " " post. inst.                         | ✓ 120 = 3' - 11"        |
| " " " ant. "                              | ✓ 157 = 5' - 2"         |
| " breadth                                 | ✓ 35' = 1' - 2"         |

✓ blubber light pink

No 63

Sei Whale ♂ Aug 1/10 Aikawa

Top of head all clear dark blue gray & show the same ridges running parallel on each side of median ridge that I described in last whale. They go clear to tip of snout. There is also on each side a deep crease about a foot long opposite the anterior half of the blowhole.

Whole throat & breast to a little in front of fins light gray - the furrows are dark gray and the folds lighter.

On left "ventral side" from a point about two feet anterior to fin to about 6 ft from end of ~~folds~~ furrows, the folds are strongly pink & furrows also. This patch is comparatively small.

Right lip gray shading into lighter gray on ramus which is same color as throat and breast. There is a small pink patch just below mandibular symphysis.

There are 16 folds in the pink ventral patch. The abdominal folds back of the pink patch are gray tinged with pink.

Peduncle light blue gray. The gray markings extend on sides over the ends of furrows but are scattered.

Flukes Have central portion (below) very light

gray (lighter than sides) & a wide posterior  
edge dark gray also a very narrow anterior  
edge of dark gray - above blue gray  
like head & back

Dorsal

Blue gray

not quite so  
convex as is  
usual

### Measurements

Total length by eulers

Fins tip to tip

1 " to dorsal

" " anus

" " penis

Height dorsal

Snout to eye

" " blowhole

F in tip to head humerus

" " " post. vert.

" " " ant "

" breadth

$$L/280 = 42'$$

$$L/303 = 9'-11"$$

$$L/376 = 12'-4"$$

$$L/361$$

$$\text{303} = 11'-10"$$

$$L/411 = 13'-6"$$

$$L/28 = 11"$$

$$L/270 = 8'-10"$$

$$L/223 = 7'-14"$$

$$L/175 = 5'-9"$$

$$L/122 = 4' 0"$$

$$L/152 = 5' 0"$$

$$L/35 = 1'-2"$$

Blowhole a delicate pink

1030 a.m. Roko Maru

No 64

r

Finback ♂ Aug 5/10 Aikawa

Right ramus + tip light gray except near tip which is white. The gray joints which run up toward anus are not indicated:

On the left side the dark gray color runs into the 4th furrow from the median line at the tip of the jaw.

The curve of upper edge of peduncle down to flukes is more abrupt than that of lower edge.

Urine light amber.

Angle of flukes with body axis



Ribs

13 pres ribs.

## Measurements

Total length = 61'-9"

~~61'-9"~~

Nose to eye = 48'-10"

" " " anus = 16'-9"

" " " penis = 21'-6"

" " " navel = 27'-8"

" " " dorsal = 14'-10"

" " " pectoral = 40'-5"

Fin tip to head humerus = 8'-3"

" " " ant. insert. = 7'-4"

" " " post. " = 5'-7"

" breadth = 1'-10"

Height dorsal = 1'-5"

Snout to eye = 12'-11"

ant. part. breadth flukes = 3'-7"

Eye to ear = 2'-11"

Length longest whalebone = 3'-2"

Length white portion of baleen = 2'-10"

# Sai Whales - Color

Aug. 2<sup>nd</sup> & 3<sup>rd</sup> I spent outside on the w/s "no 5. Hogen  
maru." Four sai whales were killed during  
that time as follows

|       |   |        |                          |
|-------|---|--------|--------------------------|
| no 65 | ♂ | 40 ft. | } Aug. 2 <sup>nd</sup> . |
| " 66  | ♀ | 41 ft. |                          |
| " 67  | ♂ | 45 ft. | } Aug. 3 <sup>rd</sup>   |
| " 68  | ♀ | 48 ft. |                          |

nos. 65 & 66 had the throat breast & abdominal  
fold & light pink - the furrows of the  
entire throat were dark gray. On the  
breast & abdomen a few furrows  
were pink. There was no gray band  
extending across abdomen at navel &  
the entire ventral line of the peduncle  
was pink - a little deeper pink than  
the folds. There was no bluish tinge  
to the general body color. The color of the  
peduncle & sides was very light  
gray shading into the light pink of  
the ventral surface very gradually.

The top of the rostrum from the tip to  
the eye was clear gray (not very dark).  
From the eye the gray head color  
extends in a curve up & back on to  
the dorsal surface; there was a  
space about two feet wide directly  
above the fins which was much  
lighter gray than the back color

and the line where the two colors met was well marked.

a band of dark gray as broad as prominent insert. of fin to end of furrows + of uniform breadth <sup>throughout</sup>, extended across + back obliquely almost to ventral line.

Nos. 67 + 68 had the throat furrows all dark gray. The folds of the throat + breast were not pink but white.

The general color of the body was much darker than that of nos. 1 + 2.

no. 67 had a broad area of on the abdomen clear mouse gray.

Viewed from above the whales would look like this



The under sides of the flukes of nos 1 + 2 were very light gray almost white + lined as usual.



"ne Taihei" 3.30 P.M.

note 9

Sei whale ♂ Aug 5/10 Aikawa Rikuyuu

Throat field white - Right ~~runner~~ eye  
light gray shading into pinkish white on  
lower portion of runner. Flukes at  
about the same angle as at finback

|                    |             |      |
|--------------------|-------------|------|
| Total (by euliers) | = 48' - 4"  | 1473 |
| Flukes to dorsal   | = 14' - 2"  | 432  |
| " " anal           | = 11' - 11" | 363  |
| Snout to eye       | = 9' - 3"   | 282  |
| " " blowhole       | = 7' - 1"   | 216  |
| Height dorsal      | = 1' - 6"   | 46   |

Notes on a foetal Sei whale 8' - 6" long taken from  
a female 48 ft. long killed Aug 5/10 (note 9)

The blowholes are situated between ~~and~~ <sup>above</sup>  
two prominences which meet anteriorly  
forming a V. By inserting my fingers in  
the blowholes ~~there~~ and pressing downward  
& forward enough to open the interior  
nasal passages the prominences at  
the sides & int. front of the nostrils, were  
considerably raised. This must be the  
position ~~take~~ assumed during ~~the~~ expir-  
ation, as the expulsion of the breath opens  
the interior nasal passages.

By spreading the nostrils until they  
~~look~~ the form of a wide ellipse which  
as shown by my photos is their cond-  
ition during ~~inspiration~~, both edges  
of the blowholes were <sup>raised</sup> ~~raised~~, the inner

slightly, & the outer greatly. I believe therefore that the only difference in the position of the nostrils during the two respiratory acts is that the adjacent edges are raised to a greater extent because of the wider opening of the nostrils during inspiration than during expiration.

I am aware that this view is contrary to the position taken by me in a recent paper, however I am convinced that this is ~~the~~ correct. Before I had not examined ~~the~~ a whale with this end in view.

No 70

Sea whale ♂ Aug 18/10 Aikawa 8 P.M. Goitogei

Entire throat ventral breast & abdomen light pink furrows deep pink - between corner of mouth & fin seven fields are light gray & then a wide pink unmarked space under fin & opposite middle of fin laid back a short, light gray band runs obliquely down & back - Ventral line pink to about 6 ft. in front of flukes -

Navel at end of furrows - This whale had a great quantity of partly digested fish in its stomach, Capt. Andersen told me it was pursuing a school of small fish when he killed it - The fish were said to be sardines.

|                                     |          |      |
|-------------------------------------|----------|------|
| Total length (with cutters measure) | = 41'-6" | 1265 |
| Flukes to anus = 11'                |          | 335  |
| " " navel = 17'-6"                  |          | 533  |
| " " post vent pectoral fin = 28'-6" |          | 868  |

measurements of Sperm whales taken  
at Aikawa, Japan during season of 1909

July 21 Sperm 60 ♂  
" 25 " 40 ♀  
" 25 " 43 ♂  
" 27 " 40 ♀

nine Sperm taken at Oginohama but  
were not measured during 1909

In all the whales which I have examined of all  
species there was considerable differences  
in body proportions viz. in the relation  
of the circumference to the length. Some  
whales were very "thick" others being long  
& slender comparatively.

no 72 Sea whale ♀ juv. Aug 20/10 - Aikawa 8-30 A. M. Rocks near  
Ventral surface all <sup>light</sup> pinkish - throat, breast,  
abdomen & ventral line of peduncle almost  
to flukes - on right side of throat a few furrows  
were dark gray, but most all pink.  
Total length = 30' - 10" 940 "  
Flukes & navel = 13' - 5"  
" " anna = 8' - 2" 248 "  
Flukes (notch to tip (along port edge)) = 3' 11" = 119 "  
" tip to tip (estimated) = 7' 8" = 234 "  
Snout to eye = 6' - 1" = 185 "  
" " blowhole = 4' - 10" = 145 "  
Height dorsal = 10" = 25 "  
Fin tip to ant. nostr. = 3' - 11" = 119 "  
" " " port " = 2' - 9" = 84 "  
Fin breadth = 11" = 28 "  
Nant at end of furrows

## Notes on Humpback Skeleton No 25. ♂

This specimen was saved for me, but the skull was so badly broken by a blow from one of the harpooners that I decided not to send it to New York.

Vertebral  
formula

C D ~~7~~ & Ca

7 14

33

= 54

I am certainly of this formula, but

could not be sure of the lumbar units.

14 pairs of ribs

Cervicals

The atlas is free. C1 has a low spine, & thick transverse processes which extend directly outward. The metapophyses are low, thick & tubercle-like.

The axis & 3rd cervical are ankylosed by their neural arches, the centra being free.

The axis has ~~upper~~ upper & lower transverse processes; on the right side these are ankylosed to form a ring; on the left side they do not meet there being ~~a~~ ~~space~~ space of 80 mil. between their distal ends. The transverse processes are directed outward & somewhat backward; the neural spine is a low ridge. The 3rd cervical has a slender upper process & a thick, short lower process, directed strongly downward.

~~The lower process~~ The 5th is the last vertebra with a lower transverse process. The upper processes become thicker as they go backward. The spines of the 4th & 5th vertebrae are very low & small, that of the 6th is higher &



~~The ends of the premaxillae do not reach within  
 65 mm of the proximal ends of the nasals  
 The prox. ends of nasals & maxillae are  
 almost opposite each other - the maxillae do not  
 quite reach the end of the nasals  
 The proximal ends of the premaxillae  
 are opposite the prox. ends of the  
 nasals~~

The proximal ends of the nasals maxillae  
 & premaxillae are almost on a line  
 with each other

The corner is visible between the  
 maxillae below - also between the  
 palatines ~~at~~ but very slightly  
 at their proximal ends

---

Measurements of whales taken at Aikawa  
 during 1910 - measured by cutters. All  
 measurements should be discounted about  
 3 feet.

---

~~Apr. 29~~  
 Apr. 29 Finback 61 ♀  
 April 30 Finback 54 ♂

No 71 Sperm ♂ Aug 29/193  
6.30 A.M. San Diego

May 3 Sperm 5-2 ♂  
May 3 Sperm 49 ♀  
May 3 Sperm 46 ♀  
May 7 Fairbairn 60 ♀  
May 10 Fairbairn 64 ♀  
May 14 Fairbairn 66 ♀  
May 14 Fairbairn 63 ♀  
May 17 Fairbairn 61 ♀  
June 10 Fairbairn 47 ♀  
June 13 Fairbairn 63 ♀  
June 13 Fairbairn 64 ♀  
June 14 Fairbairn 48 ♂  
June 17 Fairbairn 62 ♀  
June 19 Fairbairn 67 ♀  
June 19 Sei 43 ♀  
June 20 Fairbairn 60 ♂  
June 23 Sei 47 ♂  
June 24 Sei ♂ 50  
June 24 Sei ♂ 48  
June 26 Sei ♂ 46  
June 29 Fairbairn 70 ♀  
June 29 Sei ♂ 46  
July 29 Fairbairn ♀ 68  
July 3 Fairbairn 54 ♀  
July 3 Fairbairn ♂ 61  
July 7 Fairbairn 71 ♀  
July 7 Fairbairn 71 ♀  
July 9 Sei ♂ 51 ♀  
July 12 Fairbairn 50 ♀  
July 12 Fairbairn 56 ♂  
July 13 Sei ♂ 46  
July 16 Sei ♀ 50

General color slate - much white  
~~about~~ <sup>about</sup> navel & genitalia +  
up on sides as far as mid-lateral  
line. The white ~~runs~~ runs forward  
to a couple of feet beyond navel &  
is in wide bands or stripes, peppered  
with fine gray dots - white does  
not extend backward to anus - a large  
grayish patch at ant. base of dorsal hump.  
The sides of the back above the mid-lateral  
line are unmarked - no flecks of lighter  
color. Lower half of sides of head cre-  
crossed with fine white streaks & flecked  
with white - ex. of head flecked with  
light gray. As a whole the whale  
pinnated less white than usual.  
Blubber is "crinkled" on sides to pectoral-  
~~smooth~~ from pectoral to eye - "crinkles"  
extend up on upper sides & back  
as far forward as opposite eye - the  
wrinkles end about 3 ft in front of pectorals  
on sides. Fins unmarked.  
No evidence of upper teeth  $\frac{00-0}{20-20}$   
Total length = 39'-6" Fin breadth = 2'-1"  
Fluke to pectoral = 24'-5" Six individuals  
" " hump = 15'-3" in school.  
" " anus = 12'-3"  
" " pectorals = 17'-5"  
Height hump = 11"  
Ex. of head to eye (bl.) = 10'-10"  
Tip jaw to cor. of mouth = 6'-8"  
Fin tip to head hump = 4'-3"  
" " ant. vert. = 3'-6"



July 16 ~~Sei~~ Finback ♀ 51  
 July 15 Finback ♀ 30  
 July 15 Finback ♀ 62  
 July 17 Finback 55 ♀  
 July 18 ~~Sei~~ whale ♀ 63  
 July 19 Sei 51 ♂  
 July 20 Sei ♀ 50  
 July 20 Finback 64 ♀  
 July 21 Finback 69 ♀  
 July 22 Sei whale ♀ 52  
 July 23 Finback ♀ 63 H.  
 July 23 Sperm ♀ 47  
 July 23 Sperm 37 ♀

No 73 ♂ Sei whale Aug 22/10  
 Total length = 39'  
 Intermediate between  
 class I & II

Bifurcated Sei whale first ribs. Also one which I found on the beach from a Sei whale. The first ribs of the Sei whale which I sent to Thomas, was bifurcated; also one which I am bringing from another whale.

Two Sperm with me harpoon July 28/10  
 Capt. M. Jacobsen killed two Sperm whales (small) with one harpoon. The harpoon went through the first & was fast into the second which was close beside it.

Bottlenose July 30/10  
 Capt. Olsen saw many Bottlenose Whales today

73# 9/10/10 S.P.M.  
 No. 72 Sei whale ♀ Aug 22/10  
 43 Between class I & III  
 A very dark whale - ventral line from genitalia to flukes gray like sides of peduncle. The gray band from fin to end of furrow is but slightly emphasized. Central breast from opposite end; fin insertion to opposite tip of fin laid back has folds pink & furrows. Deep pink. From tip of fin laid back to navel abdomen is gray tinged with pinkish - the usual oblique light line from fin down to back is absent - no bluish tinge to whole - Right lower lip rather dark gray shading into lighter gray on ramus. 12 fold under high fin gray. Entire throat & breast to ant. inst. 17 fins has fold gray tinged with pink to furrow. See dark gray. Left lower lip dark gray shading into a little lighter gray on ramus - not much difference between right & left lip & ramus. Navel at end of furrow.  
 Total length = 43'-2" = 1315"  
 Flukes to post. inst. pectoral = 29'-7"  
 " tip to tip = 10'-6" 32"  
 " dorsal = 12'-10" 39"  
 1 height dorsal = 12'-31" first rib.  
 Snout to eye = 8'-10" 269"  
 " " blowhole = 6'-10" 209"  
 Fin tip to head humerus = 5'-9" 175"  
 " " ant. inst. = 5'-15" 2"  
 " " " post. " = 3'-10" 117"  
 " breadth = 1'-3" 38"

This story was vouched for by two gunners but I am certain it is impossible for Sperm to be so hard to get fast to.

Finbock  
Color See no 22 for good external description in-

Fin  
described by  
Killer ~~See~~ whale no. 23 for this

Asteroids Colors deep blue, & other shades to green  
blue - some alive greeds. The red of  
various shades from brick red  
to carmine - The others of  
yellowish white mottled with purple.  
all taken June 12/10 at Aikawa, Japan

A young Finbock taken at Aikawa June 14/10  
48 ft. long ♂ has 58 breast folds - The pectoral  
alone had the entire anterior edge white - the  
dark gray prolongation is more almost absent  
only one showing which ran down for a  
short distance exactly opposite the tip of the  
fin laid back - I found one of the "red"  
parasites on this animal.


See whale  
description. For good description of Sei whale color see  
no 38 ♀

Finbock  
Eye markings For markings about eye & ear of Finbock  
see no. 37 ♂

Finbock  
white baleen  
absent. See whale no. 4 for absence of white baleen

a new  
parasite  
on whales

On June 11/10 a Finback whale of 42 ft long was brought in at Aikawa & the body was the host of a parasite which I had never seen on whales before, nor have I known of its record.

For some time past I have recorded the presence of white & gray "scars" on ~~the~~ the sides, & entire body, but especially the sides of the peduncle, of Blue, Finback & Sei whales. These scars are <sup>usually</sup> in ~~the~~ <sup>the</sup> form of oblong spots composed of fine wavy lines radiating outward from a common center. Like this -  I have observed them most frequently on Finbacks, & Sei whales; and they were present on nearly all of the Finbacks ~~taken~~ which I observed in Alaska & Vancouver I.d., altho' not to such a great extent as in the Javan whales. I was sure this was <sup>caused by</sup> a parasite of some sort but ~~only~~ had never seen the animal before.

On this whale a great many were present and there were many scars in different stages - some containing the parasite & some almost healed. The ~~scars~~ ~~parasite~~ parasite apparently fastens to the skin & travels a short distance forward going deeper ~~into~~ <sup>leaving a white mark in its track.</sup> into the blubber as it proceeds. This is the white central

- Length of skeleton
- Length of skull (straight)
- Breadth " " greatest
- Length of rostrum
- Breadth " " at middle
- Length of mandible (st)
- " " " curved
- Breadth orbit least
- " " " greatest
- Length of nasal

There is however a 197.  
different parasite which  
affects the Blue whales  
which I believe to be a  
~~different~~ cirriped. It  
leaves a cupshaped depression,  
sometimes lined  
with a ~~granular~~ membrane  
having a granular surface.  
This seems to be mostly on  
Blue whales - at least I  
have not seen it on  
Finbacks or Sei whales.  
I remember of having  
seen a Finback in  
Alaska which has the  
same scar as I have  
described below - probably  
caused by the same  
parasite.

See also nos. 2-24

line of the scar. The fine wavy lines which radiate  
out from the center are apparently ~~caused by~~ formed  
during the healing process after the parasite has left the  
host. At the bottom of each scar ~~which~~ contained a parasite  
was a sack containing more or less ~~pus~~ pus. The  
parasites were embedded to about  $1\frac{1}{2}$  inches in some <sup>places</sup> &  
& in others had travelled a semicircular course  
appearing again about 2 inches from the point of  
entrance. The parasites are about 8 inches long with  
a transverse "head" which embeds itself in the blubber.  
(They can be described later as many were preserved.) They  
could be pulled out with difficulty. They were most  
plentiful on sides of peduncle but were on top of rostrum,  
lips & back as well - ~~some~~ few on the breast folds.  
Some of the scars were irregular & branching while others  
& did not have the wavy transverse lines radiating  
out from them - the majority, however, were  
of the oblong type. <sup>many of</sup> These scars on the Blue & Sei  
whales are caused by this same parasite I am sure  
see above

In British Museum is a skull of Megaptera from California.

Fribock  
with barnacles

One barnacle (Coronula) was present on the top of the head of a Fribock 42 ft long ♀ taken at Ukbarra June 10. This same whale had sustained an injury apparently to the upper surface of the snout. The epidermis was in the form of round "islands" about 4 inches in diameter - sometimes isolated - sometimes the edges touching. These were situated on a yellowish white granular surface - This was also present in one or two places near eye. It may have been caused by a parasite of some sort, but I believe it was from external injury. The whole top of the head was marked with long, narrow whitish streaks which were apparently scratches.

Humpback

Whale no 21 had a pink spot on breast - I observed the same thing on one or two Van. Humpbacks.

Porpoises  
in Alaska

While in Alaska (1908) I several times saw schools of a black & white striped dolphin which I am certain was Lagenorhynchus cruciger. I was close to them & had good opportunities for observation.

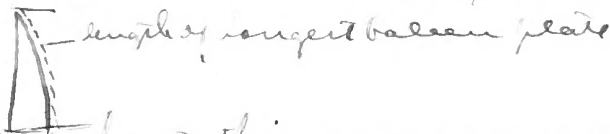
~~The gum was all the same.~~

Finback  
white  
part of  
baleen

The length of the white portion of the baleen now in Finbacks is necessarily of some what indefinite determination, in some individuals, the <sup>transitional</sup> separation between the light & dark portions, was abrupt - in others there was a gradual shading off from the white into the dark, the plates of transition having half their external edges white & half dark.

length of  
baleen plate

All of my measurements of "length of longest <sup>plates</sup> ~~portion~~ of baleen" are taken along the inside of the plate from the gum to the tip not including the bristles.



True does not state how this measurement was taken in his specimens.

Finback?  
~~Finback?~~  
sternum

The sternum of an adult ~~Finback?~~ <sup>Finback?</sup> which I photographed at Aikawa Japan is most nearly of the shape of Fig. 21, page 141 True's "Whalebone Whales." It is half way between Fig. 21 (page 141) & <sup>Fig. 49</sup> 49 (page 187).

Finback  
skin

The outer layer of the epidermis of Finback is much thicker than that of either Blue, Finback or Sei whale.



Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. March  
 4 1-24 27 28 29 21 49 16 14 11 28 28  
 3 3-31 28 26 23 29 28 16 13 10 17 9

Jacobsen  
 Humpbacks

~~Capt. Jacob~~

Capt. Jacobsen & his son both believe the Humpback to be the most widely distributed of the large whales.

All the whaling captains say that the Humpbacks & Blue Whales are the first to leave the hunting grounds - that is they are frightened away much quicker than the Sei whales & Finbacks.

Schools

Sperm whales

They tell me that here at Aikawa in August & Sept. the Sperm whales are in schools of from 100 to 500 individuals. Capt. Jacobsen & his father both agree that in these two months many times one will find schools of five or six females & only one big bull sperm.

Jacobsen  
 Porpoises

Capt. Jacobsen tells me that he sees many porpoises out side near Aikawa & that he recognizes at least three kinds - one of which does not have a dorsal fin. Probably this is ~~Mesodon phocaenoides~~ <sup>Tursiops borealis</sup>.

Ellefsen  
 Sei whales

Capt. Ellefsen says that the Sei whales here are larger than those at Norway. All gunners agree that they look the same as the Norwegian specimens.



20 no. 6 1865 - 21.5%  
 23 " 9 1845 - 21.6%  
 16 12 1980 - 22.2%  
 11 " 11 1805 - 20.0%  
 14 " 12 1860 - 21.0%  
 av. 20.8%  
 28 " 13 1860 - 20.9%  
 12 " 15 1135 jin (17.6)  
 16 " 16 1910 - 18.4%

True 21.9%  
 18.4  
 3.8%  
 var.  
 True 19.3%  
 2.6%  
 var.  
 3.8  
 2.6  
 1.2 diff.

" 6 1865 - 74.5%  
 " 9 1845 - 76.9%  
 " 12 1860 - 76.0%  
 " 13 1860 - 75.8%  
 " 15 1135 jin (70.9)  
 " 16 1910 - 77.4%  
 " 17

no 9 - 34.1%  
 " 11 - 34.6%  
 " 13 - 31.4%  
 " 15 jin (30.8)  
 " 16 - 35.0%  
 True 34.5%  
 31.4  
 3.6%  
 var.  
 True 32.3%  
 2.2%  
 var.  
 3.6  
 2.2  
 1.4 diff.

77.4  
 74.5  
 2.9%  
 True 79.8%  
 75.5  
 4.3%  
 var.  
 4.3  
 2.9  
 1.4 diff.  
 Fair up to humerus  
 " 6 - 12.3%  
 " 9 - 12.1%  
 " 10 - 12.2%  
 " 12 - 12.4%  
 " 15 jin (12.2)  
 " 16 10.7% up in pin

no 9 - 22.4%  
 " 12 - 23.3%  
 " 13 - 21.0%  
 " 15 jin (21.5%)  
 True 24.6%  
 20.3  
 21.0  
 3.3%  
 var.  
 True 20.2%  
 4.4  
 2.3  
 2.1 diff.  
 4.4%  
 var.

True 13.1  
 11.2%  
 1.9%  
 var.  
 no 6 - 19.0%  
 " 10 - 19.0%  
 " 11 - 17.1%  
 " 15 jin (14.9)  
 " 16 15.9%  
 True 19.7%  
 17.2%  
 2.5%  
 var.  
 17.4%  
 av.

Humerus  
 no 6 - 2.3%  
 " 9 - 2.1%  
 " 12 - 1.9%  
 " 13 - 2.4%  
 " 15 jin (1.7)  
 True 3.2%  
 2.4  
 1.9  
 .5%  
 var.  
 True 2.0%  
 1.2%  
 var.  
 2.1%  
 av.  
 no 6 - 3.2%  
 " 9 - 2.8%  
 " 10 - 3.0%  
 " 11 - 2.8%  
 " 12 - 3.0%  
 " 13 - 2.8%  
 " 15 (3.2)  
 " 16 - 2.6%  
 av. 2.9%

4 224.  
\$ 10 yd  
\$ 333

Blue Devil Fish = } name taken  
white " " = } fine blubber 5.00  
Ordinary " " = } 4.00

white fine blubber

blue fine ant side

Robt. Collet On the external character  
of Ruffell's Porpoise *B. borealis* season  
P. J. S. 1886 pp. 243-263-pls. 25-26

54  
21  
33

H. Ellefsen  
Skjulestok  
stokke str.  
Norway

Gundersen n.g.  
A. Kitterson  
Melson v.g.  
M. Hansen n.g.  
H. Hansen n.g.  
O. Bogen t  
N. Skoutarf v.g.  
H. Ellefsen g  
F. Olsen v.g.  
A. E. Hekrum v.g.  
Ridar Jacobsen g  
M. Jacobsen g  
~~Johansen~~  
N. Bogen g  
J. Jorgensen g  
S. Samuelsen g  
C. Larsen v.g.  
Y. E. Andersen v.g.  
F. Gjertsen n.g.  
A. Augustine v.g.  
neilsen g

Winter Finback 60 ft whale  
about \$5000

Winter Sei 45 ft whale  
\$1500

Winter Humpback whale  
40 ft. \$6000

Winter Blue 75 ft. whale  
\$4000 or 5000 - 85 ft  
about \$8000

Winter Sperm 40 ft. whale  
\$2500 - about same  
in summer also because  
meat not good to eat.

Summer  
Sei whale about 800 yds  
Finback " \$1500 to 1800

Fugimura Kaisha  
Tada Hogen Kaisha  
Kisusaka Kabushiki Kaisha

oil Blue whale  
Bones 160 cans  
only \$250  
8000  
32000  
40000

oil Sei  
Bones 5 cans  
only \$250

oil Humpback  
Bones 25 cans  
only \$250

Finback

Snout to eye -  
" " alarholes  
" " pectoral  
" " dorsal  
Pectoral tip to humerus  
" " midch.  
Dorsal height  
Flukes tip to tip

| Am.  | Europe | Japan |
|------|--------|-------|
| 20.6 | 20.1   | 20.8  |
| 18.4 | 18.1   | 17.4  |
| 33.2 | 33.4   | 33.7  |
| 77.1 | 76.0   | 76.0  |
| 12.2 | 12.5   | 12.2  |
| 2.9  | 2.9    | 2.9   |
| 2.4  | 2.3    | 2.1   |
| 22.4 | 20.1   | 22.4  |

Kamaishi  
Y. E. Andersen  
Aaröstrand Parö  
fr. Tönsherg  
Norway  
S. Samuelsen  
Österbek Nötterö  
fr. Tönsherg  
Norway

Thimbleback meat best of all  
about 5.00 lbs. baleen in one blue whale

|   |            |   |   |   |                    |
|---|------------|---|---|---|--------------------|
| " | 70 or 80   | " | " | " | See                |
| " | 300 lbs    | " | " | " | Finback            |
| " | 100 "      | " | " | " | <del>Finback</del> |
| " | 25 or 30 " | " | " | " | Cal. Gray whale    |

|         |             |  |                     |
|---------|-------------|--|---------------------|
| 100 lbs | Blue whale  | <sup>paleen</sup> <del>worth</del> 8 yen | Oriental Whaling Co |
| 100 "   | Finback     | " 10 "                                   |                     |
| 100 "   | sei whale   | " 3 " (not rare)                         |                     |
| 100 "   | " "         | " " " " "                                |                     |
| 100 "   | Cal. Gray " | " 20 "                                   |                     |
| 100 "   | Right "     | " 4 20 "                                 |                     |

|         |                     | (winter) | to eat     |
|---------|---------------------|----------|------------|
| 100 lbs | fresh blubber worth | 4 yrs    | Blue whale |
| "       | " " " "             | "        | Finback    |
| "       | " " " "             | 7        | Humpback   |

Tail worth 100 lbs <sup>In winter to eat.</sup> about & you of all whales

100 lbs. fresh red meat, worth 1/2 yen of all  
whales

2000

Wages of Gunners

#  
\$1.00 to 2.00 per mo.  
according to rating  
of gunner.

Wages of gunners  
winter Oct. to April.  
Bonus; Blue, Humpback & Finback = \$55.  
Sperm Sei & Cal. Gray = \$40

Summer, @ 4.14, to Apr. 12,

Barnes: Blue Finback + Humpback = 44.0  
 Sperm Sei whale = 43.2

Cutters get wages of  
\$13 to \$15 per mo. & board

Barnus inhaler longer chain 50 ft = .50 sec  
" shorter " " = .25 sec

Cutting Foreman gets wages \$7.8 per mo.

21  
21 Wainihon Sussan, Kah, Kaisho  
22 Nagato Hoge " "

|    |      |                                |     |
|----|------|--------------------------------|-----|
| 18 | 1884 | at Aikawa                      |     |
| 19 |      | Tayo Hozie Kabushiki Kaisha    |     |
| 20 |      | Kisusui Kabushiki              | "   |
| 21 |      | Fujimura Goshi                 | "   |
| 22 |      | Tosa Hozie Gomei               | "   |
|    |      | at Oginohama                   |     |
| 23 |      | Naigai Suisan Kabushiki Kaisha |     |
| 24 |      | Wato Gyogo                     | " " |
| 25 |      | Tayo Hozie                     | " " |

